

Procedure Manual for Professional Services



State of Maryland
Department of General Services

Office of Facilities Planning, Engineering and Construction
Project Management and Design Division
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DIVISION I GENERAL REQUIREMENTS

1. PROFESSIONAL SERVICES

1.1 PROCEDURES : The following procedures govern the selection of architects and engineers to provide professional services for both individual projects and indefinite quantity contracts in the fee range as noted.

- a. Total Fees in Excess of \$100,000: Expressions of interest in projects within this fee category will be solicited through announcements in the Maryland Contract Weekly and other appropriate publications. Respondent firms will subsequently be asked to submit their qualifications to the General Professional Services Selection Board (GPSSB) for evaluation by the Qualification Committee. Firms whose qualifications are rated at 85% or better of the maximum score attainable will be considered qualified for the project. The Qualification Committee will present the ranking of the firms to the GPSSB for approval and authorization for the Negotiation Committee to initiate negotiations with the most qualified of the firms deemed eligible for further consideration. The Negotiation Committee will attempt to negotiate a fair, competitive and reasonable fee with the most qualified firm. If successful, the Negotiation Committee will present the final fee to the GPSSB for approval and subsequent recommendation to the Board of Public Works. If unsuccessful, the Negotiation Committee will terminate negotiations with the top rated firm and initiate negotiations with the next most qualified firm.
- b. Total Fees up to \$100,000: Expressions of interest in projects within this fee range are solicited through announcements in the Maryland Contract Weekly. Interested firms will be asked to submit a letter of interest and/or a brief statement of qualifications to The Department of General Services (DGS) for consideration. DGS and the Using Agency will form an Evaluation Committee to evaluate the qualifications and rank the firms according to their qualifications score. Firms whose qualifications are rated at 85% or better of the maximum score attainable will be deemed qualified to proceed to fee negotiations. The Negotiation Committee will initiate negotiations with the most qualified of the firms deemed eligible for further consideration. The Committee will attempt to negotiate a fair and reasonable fee with the most qualified firm. If successful, the Committee will present the final fee to the DGS Procurement and Review Board (DPRB) for approval. If unsuccessful, the Committee will terminate negotiations with the top rated firm and initiate negotiations with the next most qualified firm.

1.2 MULTIPLE DESIGN PROJECTS

- a. Indefinite Quantity Contract: The Department of General Services will periodically enter into an indefinite quantity agreement with one or more firms to facilitate design services for construction projects, or consulting services for studies, reviews, programs, etc. that cannot be accomplished by DGS's in-house staff resources. Firms will be selected in order of their ranking for specific projects as they become defined.
- b. Subsequent Contracts: Subsequent contracts will be awarded to successive ranked firms as long as the Department is satisfied:
 - 1) with the services provided by the firm;

- 2) that the firm has sufficient personnel resources to undertake additional work;
- 3) that the fee for the services proposed is fair, competitive, and reasonable; and
- 4) that another ranked firm does not have special qualifications or experience that would significantly affect performance on a particular project.

It is understood that this evaluation will not commit DGS to contract for any project with any firm on the list.

1.3 PHASES OF A/E SERVICES

a. The Architect/Engineer (A/E) assigned by contract to a given project shall provide, complete and adequate in every detail, the professional services described in the Standard Form of Agreement with Architects/Engineers (Attachment #1) and, where appropriate, in the completed DGS Form GPSSB-20. The six phases of A/E services are:

- 1) Preliminary and Schematic
- 2) Design Development
- 3) Construction Documents
- 4) Bidding and Negotiating
- 5) Construction
- 6) Post Construction

b. For certain Capital Maintenance projects, all six phases might not be required. In these cases, the Project Manager will define the scope of services to be provided at the time the fee is negotiated.

2. DGS PROJECT NUMBER

2.1 ASSIGNMENT: At the Project Initiation Conference, the A/E will be given the DGS project number. This number must be used on all correspondence, drawings, specifications, estimates, shop drawings, invoices, and all other matters relative to the project.

3. THE PROGRAM AND DESIGN CRITERIA

3.1 PROGRAM: The program as delivered to the A/E and the A/E Technical Proposal are to be considered firm as to the scope of the project. The A/E contract is with DGS. If a using agency wishes to change some element of an approved program, the agency head must request the change in writing to the Secretary of DGS and the DGS Project Manager. DGS and the Department of Budget and Management must approve any changes to the program. The A/E is cautioned to take particular note of this requirement.

3.2 DESIGN CRITERIA: All State improvements will be planned, designed and constructed to be attractive and functional, with an efficient utilization of space. They will be economical to construct, operate and maintain. Every opportunity will be used by each Agency and each A/E to omit unnecessary or "nice to have" features.

- a. It is the objective of the State to achieve effective life cycle costs by application of sound economic and technical analyses by the A/E.
- b. Buildings shall be designed as sound structures of conventional shapes which avoid extraneous features and

excessive perimeter walls. Special attention will be given to the economics of the interrelationship of architectural, structural, mechanical and electrical systems.

- c. Features which could be considered extravagant include a building with a low efficiency factor (see Building Efficiency Factors, Division I, paragraph 12.4 b.); extensive roads and sidewalks, and parking to meet extreme requirements; elevated walkways; superfluous lighting to enhance aesthetic effects; grandiose landscaping schemes which include elaborate and expensive benches, lighting fixtures, walks, etc., when simpler plans and economical fixtures and features could be adequate; specifying mature trees when standard size nursery stock would suffice.
- d. Lighting systems shall be designed for high energy efficiency while still maintaining IES recommended lighting levels. The A/E will investigate the availability of energy incentive/ rebate programs that may be offered by the local utility company and will incorporate appropriate features into the lighting design so as to accrue the maximum benefit of such programs for the State.

The A/E should be aware of the National Energy Policy Act which prohibits the manufacture of certain light sources.

4. AVAILABLE FUNDS

- 4.1 DESIGN BUDGET: The project design budget will be established during fee negotiations; and the A/E must not exceed (1) the stated funds for the work when the assignment is confined to the schematic design and/or design development phases or (2) the total cost of the project (including fees, construction costs, contingencies, inflation, inspection, testing and other incidental costs) when all phases and construction are included.

When only the schematic design and/or design development phases are included, it is assumed by DGS that the A/E agrees that each phase of the project can and will be completed in a satisfactory manner within the funds stated as available for that phase.

- 4.2 A/E PROPOSAL: The A/E's proposal will include a fee for all phases of work defined in the request for proposal, but the initial contract may include only those phases for which funds have been appropriated. DGS may add the additional phases to the A/E contract when the funds are appropriated.
- 4.3 EXCEEDING BUDGET: When the A/E determines that the program cannot be achieved within the design budget, the A/E will notify DGS immediately with alternatives.

5. COORDINATION AND CORRESPONDENCE

- 5.1 COORDINATOR: The DGS Office of Facilities Planning, Engineering and Construction (OFP), Project Management and Design Division (PMD) project manager assigned to the project will act as coordinator between the using agency, OFP Project Management and Design Division, and the A/E.

- 5.2 NOTIFICATION: The OFP Project Manager will notify the using agency of the date, time, and location of all project conferences. To the extent possible a representative of the using agency will be present at all conferences.

- 5.3 COPIES: Throughout the project development, copies of all correspondence, estimates and other matters should be directed to the OFP Project Manager. Such information will be coordinated as necessary by OFP with the using agency and others concerned. The A/E is responsible for distributing drawings and specifications for review to OFP as well as to the Using Agency,

and other local and regulatory agencies. (See DGS Review Drawing Distribution, Attachment #2).

5.4 SITE VISIT: The OFP Project Manager will arrange for the A/E to visit the site accompanied by a representative of the using agency as soon as practical.

5.5 A/E TEAM: The professional A/E team for the project will be the same design team as stated in the team data submitted to the GPSSB or DGS unless a change is requested and approved in writing by DGS in advance of any substitutions.

6. MINUTES OF CONFERENCES

6.1 PREPARATION: The A/E will prepare concise minutes of any and all conferences held relative to the project. These minutes will state all decisions reached and who made them. The original will be addressed to the OFP Project Manager, with copies as required for the using agency and any other persons concerned. (See Division II, paragraph 6.4) Minutes will be distributed within five working days after the conference.

6.2 NOTIFICATION: The A/E will notify the OFP Project Manager of all desired or anticipated conferences with the using agency personnel sufficiently in advance of the meeting to permit the attendance of all appropriate personnel. As a general rule, such conferences will be held at OFP offices. The OFP Project Manager will arrange for an appropriate meeting room.

7. APPROVAL OF CONSULTANTS EMPLOYED BY ARCHITECT/ENGINEER

7.1 APPROVAL: The names of all consultants including testing laboratories or test boring contractors engaged by the A/E will be submitted to DGS for approval before any services are performed by such individuals. Approvals will be in writing from DGS.

7.2 CONSULTANT REQUIREMENTS: The A/E with whom DGS has a direct contract will negotiate his agreements with his/her consultants so that the said consultants are bound by the requirements of the A/E agreement with DGS and this manual.

8. PRESS RELEASES

8.1 POLICY: No A/E executing a project for the State will issue any press release or respond to any inquiries by any publication, including newspapers, without first clearing the text with the Assistant Secretary, OFP. Any inquiries from the media will be referred to the DGS Public Information Officer.

9. CONSTRUCTION COST ESTIMATES

9.1 SUBMITTALS: Cost Estimate Worksheets (CEW) must be furnished in triplicate to OFP by the A/E (see Attachment #3) at each of the following phases of work:

- a. First Estimate: When Schematic Design is sufficiently developed.
- b. Second Estimate: When the Design Development phase is complete; submission will include Life Cycle Cost Accounting and Energy Conservation. (See Division I, paragraph 10)
- c. Third Estimate: When Contract Documents are approximately 50% complete and submitted for review, the A/E shall submit, in addition to the CEW, a breakdown of costs in CSI format. A summary of the 16 Divisions shall also be included.
- d. Final Estimates: When Contract Documents are 95% complete and submitted for review and when Contract Documents are

100% complete and submitted for final review, a current CEW shall be submitted along with a detailed cost breakdown in CSI 16 Division format.

e. All estimates subsequent to the Schematic estimate shall clearly indicate where items have been revised or added.

9.2 ADDENDA: The Cost Estimate Worksheet will be revised and resubmitted when addenda reflecting an increase or decrease in cost are issued.

9.3 ESTIMATE REVISIONS: DGS may require revision or restudy of any of the above estimates as may be necessary to keep the project within the budget or to require more realistic figures, at no additional charge to the State. It is essential accurate estimates be provided. On large complicated projects DGS may require a professional estimate as part of basic services.

10. LIFE CYCLE COST ACCOUNTING AND ENERGY CONSERVATION

10.1 During the schematic phase, the A/E shall submit for approval at least four alternative HVAC systems to be studied in a life cycle cost analysis. The completed analysis shall be included in the design development submission in accordance with DGS' Procedures for the Implementation of Life Cycle Cost Analysis and Energy Conservation.

10.2 As part of the analysis, the A/E shall study at least four methods for energy and/or energy cost savings in accordance with DGS' Procedures for the Implementation of Life Cycle Cost Analysis and Energy Conservation. One of the four methods should include a geothermal heat pump system.

For energy conservation the building exterior envelope shall comply with the envelope requirements of ASHRAE 90A and 90B, or CABO Model Energy Code Chapter 8, as per the BOCA National Energy Conservation Code, latest edition.

The goal for minimum requirements shall be:

New Buildings:

Walls (gross area) - R12
Roofs (gross area, low slope roof) - R20
Roofs (gross area, steep slope roof) - R30
Windows - double glazed insulating glass, thermal-break, low e - coating, maximum window (glass only) U value of 0.49 and maximum shading coefficient of 0.55.

Renovated Buildings:

Walls (gross area) - R8
Roofs (gross area, low slope roof) - R16
Roofs (gross area, steep slope roof) - R30
Windows - Replacement windows shall meet the above goal requirements of new buildings. If the existing windows to remain are only single-pane they shall be equipped with storm windows.

If the above requirements are found to be non-attainable or that they would not result in energy conservation, such findings shall be submitted to DGS for review and direction.

11. CODES AND REGULATIONS

The Annotated Code of Maryland and the Code of Maryland Regulations (COMAR) establish legal requirements that State facilities must comply with. As applicable to specific facilities, various combinations of these requirements form the basis of professional services that must be provided by A/E firms under contract to develop construction documents for capital improvement projects.

- 11.1 BUILDING CODE: The building Code of the State of Maryland is the latest edition of the BOCA Basic Building, Plumbing, Mechanical, and Energy Conservation Codes, National Electrical Code and current ASHRAE standards, with all appendices, references and additions incorporated. Building plumbing systems also must comply with the requirements of COMAR Title 09, Department of Licensing and Regulation, Subtitle 20, Board of Commissioners of Practical Plumbing (the State Plumbing Code). Building heating systems utilizing boiler supplied hot water must comply with the requirements of COMAR Title 09, Subtitle 12 Division of Labor and Industry, Chapter 01 Board of Boiler Rules (the State Boiler Code). Compliance with all regulations and requirements of local and service district utility companies (electric, water, sewerage) where work is to be located is required.
- 11.2 FIRE CODE: The State Fire Prevention Code (COMAR 12.03.01) which references the NFPA National Fire Codes, latest edition, including Standards, Recommended Practices Manuals, etc.
- 11.3 HANDICAPPED ACCESSIBILITY: Regulations Governing Construction of Facilities for the Handicapped by the State of Maryland (COMAR 05.02.02), the Fair Housing Amendments Act (1988) and the Americans with Disabilities Act (1990) or other Federal regulations, where applicable, will supersede COMAR requirements.
- All public corridors shall be a minimum of 5'-0" wide. All doors to major areas shall be 3' - 0" wide minimum (toilet stalls and mechanical rooms excepted).
- 11.4 SEDIMENT AND EROSION CONTROL AND STORM WATER MANAGEMENT: Regulations of the Maryland Department of the Environment (MDE), Water Management Administration, 2500 Broening Highway, Baltimore, Maryland, 21224 (MD DOE Article Sections 4-101 through 4-109 Annotated Code of MD and COMAR 26.09.01.01 and 26.09.01.11):
- a. Chesapeake Bay Critical Area Criteria (COMAR 14.15.02)
 - b. Nontidal Wetlands (COMAR 08.05.04)
 - c. Wetlands (COMAR 08.05.07)
 - d. Reforestation Requirements (Natural Resources Article; Sections 5-101 (B) & 5-103; Annotated Code of MD.
- 11.5 FLOOD PLAIN MANAGEMENT: Regulations & Permits, Dept. of Natural Resources (COMAR 08.05.03)
- 11.6 WATER RESOURCES: Other water resources, rules and regulations of procedure as issued by the Dept. of the Environment (COMAR 08.05)
- 11.7 WATER APPROPRIATION: When the project requires the withdrawal of either ground water or surface water, the A/E shall be responsible for complying with all permitting requirements and shall comply with COMAR 08.05.02, "Water Appropriation or Use".
- 11.8 SWIMMING POOLS: Where the project requires a design or a repeat design for a swimming pool, all requirements of COMAR 10.17.04 shall be followed.
- 11.9 HOSPITALS: Maryland State Dept. of Health & Mental Hygiene regulations for hospitals, care and treatment facilities as

appropriate (COMAR 10.07). These regulations will be obtained from the State Department of Health & Mental Hygiene and furnished to the A/E by OFP.

- 11.10 FOOD PREPARATION: Maryland State Department of Health Regulations for Eating and Drinking Establishments (COMAR 10.15) This applies whenever food preparation or serving areas are included in the project. These regulations are interpreted by the Maryland Department of Health & Mental Hygiene, Office of Food Protection and Consumer Health Services.
- 11.11 ELEVATORS: Regulations Governing Elevators, Dumbwaiters, Escalators and Moving Walks ANSI A17.1 or the latest edition, and other requirements of the State Department of Licensing and Regulation, Division of Labor and Industry (COMAR 09.12.81)
- 11.12 HIGHWAYS: Regulations of the Maryland Department of Transportation, State Highway Administration, for any construction affecting a State Highway route or right-of-way; or local jurisdictions where projects are accessed by their roadways.
- 11.13 LEAD EXPOSURE: Maryland Occupational Safety and Health Standards for occupational exposure to lead in construction work. These regulations apply to occupational exposure to lead for every employee in construction work. (COMAR 09.12.32)
- 11.14 HAZARDOUS WASTE: Maryland State Department of the Environment for disposal of controlled hazardous substances. These regulations establish standards for generators of hazardous waste. (COMAR 26.13.01)
- 11.15 WATER AND WASTEWATER TREATMENT PLANTS: Maryland Department of the Environment Regulations for Construction of all Water and Wastewater Treatment Plants and for all connections exceeding four hundred feet. (COMAR 26)
- 11.16 WATER DISTRIBUTION, WASTE COLLECTION, ON-SITE WATER SUPPLY, AND ON-SITE WASTEWATER DISPOSAL: Health Department of Local Jurisdiction
- 11.17 FOREST CONSERVATION: Maryland Department of Natural Resources regulations for development of Forest Stand Delineation and Forest Conservation Plan in accordance with Forest Conservation Act (COMAR 08.19.04).
- 11.18 HISTORIC LANDS AND STRUCTURES: In accordance with Article 83B, paragraphs 5-617 and 5-618 of the Annotated Code of Maryland, the Maryland Historical Trust must review capital projects affecting historic properties early in the planning stages of a project. Based on their initial assessment, a Phase I Archaeological Survey might be required, which could lead to a Phase II Archaeological Investigation. For projects located in Baltimore City involving historic structures, the Design Architectural Panel (DAP) shall also be invited to review project documents.
- 11.19 SPRINKLER SYSTEMS: Installation of sprinkler systems in new construction projects shall be in accordance with Article 38A Section 12B of the Annotated Code of Maryland

12. MEASUREMENT OF BUILDING AREAS, VOLUME & EFFICIENCY FACTORS

12.1 GROSS AREA

The gross area of buildings will be measured as follows:

- a. Measurement: Measure from out to out of walls.
- b. Full Areas - include the gross area of each level:
 - (1) All interior floors (including stairs, shafts, etc.)

- (2) Mezzanine or interior balcony
 - (3) Basement, sub-basement, pipe space, boiler room, etc. (6 feet or more high)
 - (4) Enclosed space beneath upper floors (stilt design)
 - (5) Mechanical space (6 feet or more high)
 - (6) Penthouse (stair, elevator, equipment, etc. 6 feet or more high)
 - (7) Elevator machine room floor
 - (8) Fly gallery gridiron
 - (9) Pipe tunnels (6 feet or more high) under building and within 10 feet
- c. Half Areas - Include one-half (0.5) of the gross area of:
- (1) Paved porch/terrace with roof
 - (2) Exterior covered balcony
 - (3) Entrance canopy over paving
 - (4) Areaways (six feet or more)
 - (5) Unenclosed space beneath building (stilt design)
 - (6) Loading dock with canopy
- d. Exclusions: Gross Area
- (1) Unusable/unfinished attic space under pitched roof
 - (2) Roof and roof parapets
 - (3) Interior court or yard
 - (4) Covered walks (site work)
 - (5) Sun shades
 - (6) Porch/terrace without roof
 - (7) Roof overhangs (no paved walkway beneath)
 - (8) Upper space of gym, pool, auditorium, lecture hall, large entrance exceeding one story, etc.
 - (9) Pipe tunnels beyond 10 feet of building (site work)

12.2 NET AREA

The net area of buildings is defined and measured as follows:

- a. Net Assignable Area - This is the sum of all floor areas of a building allotted to an occupant, including types of space functionally usable by an occupant. Measurement is between inner faces of walls and partitions or imaginary dividing lines of open areas.

Examples: offices, classrooms, mail rooms, conference rooms, libraries, file rooms, storage pertaining to an occupant or program (not custodial or general storage), seminar rooms, laboratories (including balance, supply and preparation rooms, etc.), lecture rooms, or auditoriums (including storage, dressing and preparation rooms, stage,

etc.), toilet and locker rooms (including shower rooms) only when they are private and directly supporting a room function (e.g., for a patient's room, examination room, gymnasium, kitchen, actor's dressing areas, student bedrooms or houseparent's apartment, etc.), lounges (academic, dormitory, faculty, patient, etc.), kitchen (including food storage areas, dining rooms, etc.), athletic courts, swimming pool, dance and wrestling rooms, rifle range, library reading and stack areas (including processing, study, audio, micro-film and typing rooms, but excluding "phantom" corridors), etc. "Phantom" corridors meaning circulation space not specifically defined by fixed or movable walls.)

- b. Non-assignable (supporting) Area - This is the total of all areas remaining after net assignable areas have been deducted from the gross area. Non-assignable areas include the following:
- (1) Custodial - for building protection, care, maintenance and operation, e.g., custodial storage, janitor closet, maintenance storeroom, locker room, toilet and shower room, shop, etc.
 - (2) Circulation - required for physical access to some subdivision of space, whether or not enclosed by partitions, e.g., corridors (access, public, service, including "phantom" corridors for large unpartitioned areas), elevator shaft, escalator, fire tower and stairs, stair hall, loading platform (except when required for a program function), lobby, public vestibule or entryway, tunnel, bridge, stair or elevator penthouse, elevator machine room, covered paved open areas, etc.
 - (3) Mechanical - to house mechanical equipment, utility services and non-private toilet facilities, e.g., duct and service shafts, meter and communication closets, boiler room, mechanical and electrical equipment rooms, telephone equipment rooms, fuel room, toilet rooms for public or general use, etc.
 - (4) Construction - the areas actually occupied by the structural and other physical features of the building, e.g., exterior walls, fire walls, partitions, etc.

12.3 GROSS VOLUME

The gross volume of buildings will be obtained as follows:

- a. Full Volumes: (for fully enclosed areas) For each portion of the building, multiply the gross area (see paragraph 12.1 b.) by the average height of that portion from the underside of its base floor slab (or underside of crawl space floor slab or top of ground if no slab exists) to the top of the finished roof. The height of enclosed space beneath plazas, etc. will be from the underside of the base floor slab to the finished surface of the plaza.
- b. Half Volumes: (for partially enclosed areas) - For each half area of the building as follows (see paragraph 12.1 c.), multiply one-half (1/2) of the gross area by the average height.
 - (1) Covered porch/terrace & building dock - from ground level to the top of the finished roof
 - (2) Exterior covered balcony - from the underside of the

floor construction system to the top of the finished roof

- (3) Entrance canopy over paving - from the underside of the slab to the top of the finished roof
- (4) Areaways - from the underside of base slab to top of enclosure walls or grating
- (5) Unenclosed space beneath building (stilt design) - From the top of slab to underside of ceiling, if there is an enclosed floor or crawl space beneath the open area. From underside of the slab to the underside of the ceiling, if there is no enclosed floor or crawl space beneath the open area.

12.4 TABULATION: Tabulation of Areas, Volume and Efficiency will be prepared and furnished by the A/E as follows:

a. Itemize: Itemized tabulations for the following:

- (1) Gross Area - Floor by floor plus appurtenant areas
- (2) Net Assignable Areas - Room by room office space standards used in developing building programs are provided in Table 1 at the end of this Division.
- (3) Gross Volume - Includes half volumes of partially enclosed areas as well as full volumes of totally enclosed areas
- (4) Efficiency Factors - Divide gross area by net assignable area, e.g., 49,209 SF gross area divided by 33,705 SF net assignable area = 1.46.
- (5) Percent Efficient - Divide net assignable area by gross area and multiply by 100, e.g., 33,705 SF net assignable area divided by 49,209 SF gross area, multiplied by 100 = 68.5% efficient.

b. Building Efficiency Factors (Guidelines): Table 2 at the end of this Division identifies the range of efficiency factors for several types of buildings common to State facilities. They are to be adhered to closely. Refer to Attachment #4, Summary - Areas, Volume & Efficiency, for the method and parameters by which the efficiency factor of a building will be determined.

c. Submission of Areas, Volume and Efficiency

- (1) Requirements: Submissions are required for all new buildings and additions; they may also be required for alterations and renovations
- (2) Forms: Use DGS Form, Summary Areas, Volume & Efficiency, Attachment #4.
- (3) Content: Submissions at each phase will show not only the tabulations for that phase, but will also show the tabulations of program and all prior phases (based on the approved plans of the prior phases) on the same form.
- (4) Copies: Submit in triplicate to OFP.

d. Submission Schedule: The A/E will submit current detailed tabulations of areas, volume and efficiencies at the time of submission of plans for review as follows:

- (1) Schematic Phase - On each architectural floor plan, the actual net assignable and the programmed net assignable area will be noted for each programmed space.
- (2) Design Development Phase
- (3) Construction Document Phase - Mid-point Review (50%) and Final Review (95%)
- (4) Other: Interim submissions as requested

13. SUB-SURFACE EXPLORATION AND EVALUATION

- 13.1 REQUIREMENTS: The A/E will plan and perform the subsurface exploration and evaluation and analyze the information relative to the site and subsurface conditions relevant to the project requirements. The data and analysis results shall be adequate, correct and complete for the intended purposes of planning, design, quantity and cost estimating, and determining the construction feasibility of the project.
- 13.2 SUBSURFACE DATA: The A/E will make available the data relating to the site and subsurface information and evaluation to the State, the bidders, the contractor and the construction inspector prior to starting their functions of review, bidding, construction and inspection respectively.
- 13.3 GEOTECHNICAL ENGINEER: The work of subsurface exploration and evaluation will be performed under the guidance, direction, and control of the geotechnical engineer. All submittals to OFP relating to and including the results of the subsurface exploration, evaluation and recommendations will bear the seal of the geotechnical engineer.
- 13.4 EXPLORATORY PROGRAM: During the latter part of the Schematic phase or the early part of the Design Development phase, the A/E will submit to the OFP, for review and approval, three (3) copies of the proposed Exploratory Program. The Exploratory Program will include, but not be limited to the following:
 - a. Scope: Understanding of the project and design considerations.
 - b. Boring Plan: A Layout of test borings/pits with reference to existing physical features and proposed locations of structures. Site plan of the project showing locations of structures, grading, stormwater management areas, and utilities may preferably be used to show the test locations.
 - c. Description: Number, type, and estimated depths of test borings/pits or other investigative systems.
 1. Soil borings must be taken after the building footprint is established.
 2. Soil borings must be supervised, on site, by the Geotechnical engineer to ensure the proper locations and proper depths.
 3. Soil borings must be specified to be taken to refusal depth. If the Geotechnical engineer, at some intermediate depth, is comfortable with what is being observed in terms of bearing pressure potential, then the borings need not be extended further.
 4. Soil boring must be taken at areas that the civil engineer determines are areas for possible use as fill material during the construction.

5. Soil borings must be taken at parking lot locations.
 6. Soil borings must be taken where anticipated utility lines will be installed.
 7. Soil borings in an urban site must be taken on a grid that will cover the entire lot. Where necessary, test pits shall be excavated searching for old foundations and abandoned tanks.
- d. Estimated Quantities: Estimated vertical lineal feet of earth borings and rock coring and types and estimated quantities of laboratory and field tests.
 - e. Estimated cost of the subsurface exploration including the billing unit prices.

After approval of the Exploratory Program by the OFP, the A/E will conduct the subsurface investigation and evaluation. Prior to starting field operations, the A/E will verify the underground utilities with Miss Utility and the using agency.

13.5 GEOTECHNICAL REPORT: Upon completion of subsurface exploration and evaluation, the A/E will submit to OFP three (3) copies of the Geotechnical Report and any additional results, reports, supplements, revisions, modifications or clarifications developed subsequent to the original report. As a minimum, the report will address each of the following:

- a. Geology: Geology and general nature of soil/rock/drainage/ and groundwater conditions in the project area.
- b. History: A history of the project site and relevant information relating to nearby foundations and structures, underground springs, etc.
- c. Boring plan: Boring plan, to scale, indicating boring and test pit locations referenced to existing physical features and proposed locations of structures and other facilities.
- d. Logs: Boring and test pit logs, with soil/rock description, classification, and depth and character of fill, ground water observations, and any other observations made during the exploration, including the ground surface elevations at borings and test pit locations.
- e. Characteristics: Information relating to soil/rock character, consistency, compressibility, shear strength, safe bearing value, chemical content, corrosiveness, frost penetration depth, permeability, and relevant properties.
- f. Quantity Estimates: depths, locations, and quantity estimates of topsoil, unsuitable soils, existing fill, rock excavations, borrow, demolition debris or controlled substances, etc.
- g. Rock Line: Rock line elevations with cross-sectional profiles, evidence that rock strata is sound and not underlain by mine cavities or lenses that would affect the stability and support capability. Recommendations for corrections in case of questionable stability.
- h. Foundation Analyses: Foundation analyses and recommendations including the presentation of risk and cost effectiveness considerations.
- i. Foundation Information: All relevant foundation information including design parameters, elevations of bottom of footings or pile tips, related soil bearing or pile capacity, factors of safety and settlement analysis

considerations.

- j. Recommendations: Recommendations for design and support of floor slab, retaining or basement walls, water or dampproofing and drainage, underground utilities, pavements of driveways and parking lots, stability of slopes, ground water seepage control, or other stabilization procedures.
- k. Site Evaluation: relating to excavation and earthwork feasibility. If rock excavation is involved, indicate definition, removal and handling type of equipment, blasting requirements, etc. For earthwork, indicate shrinkage factors, suitability of on/off-site materials, and borrow requirements and source. Include groundwater observations, elevations and recommendations for temporary dewatering during construction and for permanent dewatering facilities after construction. Effects of seasonal variations will be noted.
- l. Potential Problems: Identify problems which may affect the cost of construction and/or may cause delays, including presence of controlled or hazardous substances, and furnish construction precautions and recommendations. Identify inspection, testing and quality control requirements during the construction.
- m. Stormwater Management Recommendations: as to the type of stormwater management facilities suitable for the site and design parameters to be used by site engineer for systems sizing.

13.8 PAYMENT: Upon completion of work, the A/E will submit to the OFP an invoice for the completed reimbursable work, i.e., test boring, test pits and laboratory testing, verified and approved by the A/E for payment. Payment will be made by DGS to the A/E for the approved and completed testing work. All costs for boring stakeout, utility clearances, evaluation, engineering and inspection or supervision of field and office studies will be included in the A/E's basic fee for design services.

14. SEDIMENT AND EROSION CONTROL, AND STORMWATER MANAGEMENT

14.1 REQUIREMENTS: It is required that review and approval be granted by the Maryland Department of the Environment (MDE), Sediment and Stormwater Administration (COMAR 26.09.01.01 thru 26.09.01.11 and 26.09.02), for all projects in which existing earth surfaces are disturbed in the execution of the project, or in which on-site stormwater management is required to current limitations established by the MDE. Should a flooding hazard be present which cannot be alleviated by natural features, retention measures may be required in the design of controls. The A/E will be responsible for submitting plans, specifications and computations with the Design Development and Construction Document submittals directly to the MDE for review. One copy of the submittal and transmittal letter with the MDE's signature acknowledging receipt will be submitted to DGS as part of the DD and CD submissions to the OFP Project Manager.

14.2 PROGRAM: The A/E will provide sediment and erosion control, and stormwater management programs at all design phase submissions. The final stormwater management, sediment and erosion control plan(s) will address all aspects of the construction phase such as stabilization of temporary stockpiles of topsoil, waste material, etc. in addition to the overall requirements of the Sediment and Stormwater Administration.

14.3 CONTRACT DOCUMENTS: Contract documents for sediment and erosion control and stormwater management construction will be in accordance with the Regulations approved and adopted by the MDE. No changes in these measures as shown in the contract documents

may be approved by any person or agency other than the MDE. The A/E will be responsible for revising contract documents for any changes required by the MDE.

- 14.4 REFERENCE MANUAL: The reference manual controlling specifications will be: The Maryland Department of the Environment Erosion and Sediment Control Guidelines for State and Federal Projects (latest edition) and Stormwater Management Guidelines for State and Federal Projects (latest edition). Manuals can be obtained at: Maryland Department of the Environment Sediment and Storm Water Administration, 2500 Broening Highway, Building 30A, 1st Floor, Baltimore, Maryland 21224
- 14.5 CERTIFICATION: Contract drawings submitted to the MDE for approval must contain both Engineer's and DGS/Developer's Certifications as shown below:

ENGINEER'S CERTIFICATION

I (We), _____, do hereby certify that the sediment control provisions shown on this plan are designed in accordance with the guidelines, standards and specifications for soil erosion and sediment control issued by the Maryland Department of the Environment, latest edition.

_____ Signature	_____ Title	_____ Date
_____ Printed Name	MD Registration No. _____ P.E., R.L.S. or R.L.A. (Circle)	

DGS/DEVELOPER'S CERTIFICATION

I/We hereby certify that:

- A. All development and construction will be done in accordance with this sediment and erosion control plan, and further authorize the right of entry for periodic on-site evaluation by the State of Maryland, Department of the Environment enforcement inspectors.
- B. Any responsible personnel involved in the construction project will have a certificate of attendance at a Department of the Environment approved training program for the control of sediment and erosion before beginning the project.

_____ Signature	_____ Date
_____ Printed Name and Title	_____ Card No.

15. WATER AND SANITARY SYSTEMS

- 15.1 REQUIREMENTS: The A/E will comply with all requirements of COMAR Title 09, Department of Licensing & Regulation, Subtitle 20, Board of Commissioners of Practical Plumbing and COMAR Title 26, Department of the Environment, Subtitle 04, Regulation of Water Supply, Sewage Disposal, and Solid Waste.
- 15.2 STATE PERMITS: When the project requires connections to water or sewer in excess of 400 linear feet and/or a new storage or treatment facility other than septic systems that discharge to

underground infiltration systems, the A/E will obtain a Water & Sewerage Construction Permit from the Applications and Permits Section, Water Management Administration, Department of the Environment.

- 15.3 LOCAL PERMITS: When the project requires a septic system that discharges underground, the A/E will be responsible for complying with all requirements of the local county health department and will obtain their approval in writing, as well as COMAR Title 09, Subtitle 20 and COMAR Title 26, Subtitle 04.
- 15.4 SWIMMING POOLS: Where the project requires a design or a repeat design for a swimming pool, all requirements of COMAR Title 10, Subtitle 17, Chapter 04 will be followed.
- 15.5 WATER APPROPRIATION: When the project requires the withdrawal of either ground water or surface water, the A/E will be responsible for complying with all permitting requirements and will comply with COMAR 08.05.02, "Water Appropriation or Use".

16. UTILITY PERMITS AND CONNECTIONS

- 16.1 The A/E will be responsible for coordinating with any and all local and State regulatory agencies and public utility companies to identify those permits and approvals necessary to make utility connections to available public, private or municipal water, sewer, gas and electric facilities to serve the site or to construct the necessary on-site sanitary facilities to support the building project in its entirety.
- 16.2 Owner Approval: The A/E will obtain from the owners of the utilities, the necessary approvals for connection to same and an estimate of the connection fee.
- 16.3 Trade Permits: Mechanics and/or trade permits will be obtained by those trades as required of them.
- 16.4 The A/E shall include in the Project Manual a Division 1 specification section defining the Contactor's responsibility for utility permits and connections and how payment will be made to the utility owner. The specification section will also establish bid allowances for the costs of the required utility connections. The specification shall include the following paragraphs:

SECTION 01035 - UTILITY PERMITS AND CONNECTIONS

A. The project requires the following permits, utility connections, or related services provided by the government agencies or utility companies noted:

The bidder shall include in its bid the following allowances for these permits, utility connections, and related services:

1. Allowance amount: _____, for (describe permit, utility connection, or other service)

2. Allowance amount: _____, for (describe permit, utility connection, or other service)

Contractor shall obtain the necessary permits and shall subcontract with the named government agency or utility company for completion of the utility connections or related services described in this paragraph 01035 A.

B. If the actual fee charged by the government agency or utility company for the permit, connection, or related service is more or less than the amount of the allowance provided in paragraph 01035 A, the contract amount shall be

increased or decreased by change order by the difference between the amount actually charged by the government agency or utility company and the amount of the allowance provided in paragraph 01035 A. The contractor shall be entitled to no overhead or profit on any resulting increases in the contract amount.

C. Each government agency and utility company described in paragraph 01035 A may invoice DGS directly for payment of the permit, connection, or service fees charged by the government agency or utility company. The contractor authorizes DGS to pay the fees directly to the appropriate government agency or utility company upon receipt by DGS of a proper invoice. DGS shall notify the contractor in writing of each payment made directly by DGS to a government agency or utility company under this Section 01035.

D. Contractor shall reflect in contractor's schedule of values and requisitions the amounts of the allowances and the State's payments under this Section 01035.

E. The permits, utility connections, and related services described in paragraph 01035 A may not be the only permits, utility connections or related services required for proper performance of the work (as defined in the General Conditions) required by the contract. The contractor shall, at no additional cost to the State, obtain and pay for all other permits, connections, and related services required for proper performance of the work.

F. After execution of the contract with contractor, DGS may identify other permits, utility connections, or related services not identified in paragraph 01035 A and not otherwise required by paragraph 01035 E which DGS desires contractor to furnish for the project. In that event, DGS may issue a unilateral change order to the contractor requiring the contractor to furnish those permits, utility connections, or related services upon the terms and conditions of this Section 01035.

17. PROJECT PROGRESS REPORT - PLANS AND SPECIFICATIONS

17.1 REQUIREMENTS: All A/Es executing projects for DGS will file with OFP a Project Progress Report (see Attachment #5) for all phases of design. One copy will be forwarded to the OFP Project Manager in sufficient time so as to be received no later than the first day of the month immediately following the end of the report month, covering the work for the entire month. A monthly report will be submitted until a construction contract has been awarded; the A/E will submit minutes of monthly deviation reports with each monthly invoice during Phase V services. This report applies to all types and varieties of projects, including studies, master plans, etc.

17.2 SCHEDULE: The Project Progress Report will be completed progressively so that each submission includes prior status dates as well as current status. Estimated dates of completion of all design phases under A/E contract will be furnished, as well as other information indicated on the form.

17.3 DELAYS: The schedule will clearly show (under "Remarks") the reason(s) for delay(s), such as program clarification or revision, awaiting survey information, awaiting tests or borings, permits (MDE, Corps of Engineers, etc.), lack of funds, agency delays, review delays, etc. Include the dates that each delay started and ended.

17.4 COMPLETION PERCENTAGES: Overall percentages of completion will take into account the status of both drawings and specifications of each of the individual disciplines involved in the project. In general it is considered that drawings constitute 2/3 of the work and specifications 1/3 of the work.

18. PROJECT DESCRIPTION

18.1 Project Description Sheets: (original and 2 copies) will be completed and submitted by the A/E for each project at:(1)

Design Development Phase, (2) Completion of the Construction Documents Phase, prior to bidding, and (3) At such other times as requested (see Attachment #6). Follow directions for completing the Project Description Sheet. (See Attachment #6-A)

19. PRESENTATION TO THE STATE BOARD OF ARCHITECTURAL REVIEW

19.1 REQUIREMENTS: The Architectural Review Board (ARB) is created in accordance with Article 78A, Section 23, Annotated Code of Maryland. The A/E may be required to make presentations to the ARB at the Schematic and Design Development Phases.

19.2 SCHEMATIC DESIGN PRESENTATION

- a. First Presentation: The ARB shall consider the first presentation as the Schematic Design Phase regardless of the state of development and shall make its comments and recommendations accordingly.
- b. Video: The A/E may prepare a video tape of the site and surrounding structures. The video shall be keyed to a plot plan. The video shall have a maximum play time of 5 minutes. Photographs may be prepared in lieu of a video for smaller, uncomplicated sites.
- c. Notification: The A/E will be notified of date and time of the ARB meeting and be present with an explanation of the program, the schematic design of the building including exterior elevations, the site, a simple block model and cost of the project. The A/E will be advised of the time limit for the presentation to the ARB. The Using Agency will be notified by OFP of the meeting and will be encouraged to be present.
- d. Considerations: The ARB will consider all factors affecting the project, including program, siting, adaptability to the master plan (if one exists) and architectural design. The ARB, in its comments and recommendations, will evaluate the functional and esthetics aspects of the project design, and consider whether the project can be built economically, consistent with sound construction and minimum maintenance.
- e. Recommendations: After considering the submission, the ARB shall discuss with the A/E the tentative recommendations of the ARB. The A/E will be given the opportunity to reply to the ARB's comments. The ARB shall develop the final recommendation in the presence of the A/E.

19.3 DESIGN DEVELOPMENT (DD) PRESENTATION: The Design Development (DD) drawings will be presented to the ARB Review in the same manner as the Schematic Design.

19.4 MINUTES: The ARB prepares written minutes which are sent to the OFP. The OFP will advise and instruct the A/E how to proceed.

19.5 ADDITIONAL PRESENTATIONS: Additional presentations of the schematic or design development phase may be required. When subsequent meetings are required, all previous submissions shall be made available by the A/E to the ARB. All costs associated with additional presentations shall be borne solely by the A/E unless there are special circumstances acknowledged by the OFP.

20. VALUE ENGINEERING:

20.1 The OFP will utilize Value Engineering on all projects valued at \$10 million and greater, and on selected projects under \$10 million. Value Engineering Workshops will be conducted at the Schematic and Design Development Phases.

20.2 The A/E Design Team will conduct a presentation for the Value

Engineering Team at the beginning of each Value Engineering Workshop to explain the design concepts and documentation that has been developed during the respective phases.

- 20.3 The A/E Design Team will also participate in the wrap up meeting after each Value Engineering Workshop. At that meeting the Value Engineering Team will present their findings and recommendations for cost saving measures to the OFP, the Using Agency and the A/E Design Team.
- 20.4 The A/E Design Team will review the Value Engineering reports produced and furnish written responses to the OFP Project Manager on the specific recommendations.

21. APPROVAL OF CONTRACT DOCUMENTS

- 21.1 The approval of Contract Documents (which includes plans, specifications, Instructions to Bidders and General Conditions, Construction Bid Form, etc.) by the State in no way relieves the A/E of his/her responsibility for (1) the accuracy and completeness of such documents, (2) compliance with required Standards, Codes, Ordinances or other applicable regulations, or (3) compliance with the standard of care governing the A/E's performance.

22. CERTIFICATION OF CONTRACT DOCUMENTS

- 22.1 PROFESSIONAL CERTIFICATION - The following certification shall be placed on the cover sheet of the set of contract drawings and the seal and signature page of the Project Manual specifications book: "The contract documents for the indicated public improvement were prepared under my supervision and, to the best of my knowledge, information and belief, they comply with the relevant building codes of the State of Maryland."
- 22.2 SEAL AND SIGNATURE - All Contract Documents (original drawings and the seal and signature page of the specifications) shall bear the seal and signature of the primary A/E and the seal and signature of each consultant to the primary A/E on drawings and specifications within its area of responsibility.

23. CARE OF CONTRACT DOCUMENTS

- 23.1 RESPONSIBILITY: It is the responsibility of the A/E to care for, protect and know the location of the original Contract Documents until they are finally delivered to the OFP, fully corrected as "as-built" documents.

24. PAYMENTS FOR PROFESSIONAL SERVICES

- 24.1 SCHEMATIC/DD CONTRACT: When only the Schematic and/or Design Development phases are included in the A/E contract, payment is made on the basis of the phases as set forth in the DGS Standard Form of Agreement with the A/E.
- 24.2 FULL/PARTIAL CONTRACT: When the A/E has a full and/or partial services contract, payment requests shall be made in a standard form (see Attachment #7). When the A/E has extra work on a Not to Exceed basis, payment requests shall be made on Form 8 (see Attachment #8).
- 24.3 PAYMENT REQUEST: Bills may be presented at the beginning of each month covering the costs of service during the previous month. Furnish original and three copies.
- 24.4 REQUIRED INFORMATION: The A/E shall submit one copy of the current Project Progress Schedule (Attachment #5) with each payment request. This is in addition to the monthly submission required in Division I, paragraph 16.

- 24.5 REQUIRED SERVICES: All services required under DGS Form GPSSB-20 must be provided prior to DGS approval of each phase as well as DGS approval of A/E invoices for payment of applicable fees.
- 24.6 FINAL PAYMENT: Final payment of the A/E's Phase V fee shall only be payable upon submission of "as-builts". Final payment of the A/E's Phase VI fee shall be payable upon submission of Post Construction report in accordance with Division II, paragraph 8.2.

25. EQUIPMENT AND MAINTENANCE MANUALS

- 25.1 RESPONSIBILITY: It shall be the responsibility of the A/E to obtain from the Contractor and furnish in triplicate to the OFP, before occupancy or use of any public improvement, bound manuals of the following data:
- a. Wiring Diagrams: Detailed wiring diagrams of all signal systems, temperature control systems, and equipment interlocks systems.
 - b. Lubrication: Lubrication type, location and schedule for each piece of equipment.
 - c. Maintenance Schedules: required maintenance data and schedules other than lubrication for each piece of equipment.
 - d. Filters: types and required maintenance for each piece of air handling equipment.
 - e. Catalog Cuts: descriptive literature of each piece of mechanical and electrical equipment, indicating model number, size and capacity, performance curves, etc., as would be applicable to adequately identify and describe the equipment involved.
 - f. Spare Parts: recommended spare parts inventory.
- 25.2 MANUALS: manuals shall be arranged in five sections:
Elevators;
Special Equipment;
Plumbing;
Heating, Ventilation and Air Conditioning;
Electrical.

TABLE 1
OFFICE SPACE STANDARDS

<u>OFFICE TYPE</u>	<u>RECOMMENDED NASF</u>
Cabinet Secretaries or Agency Executive Directors	300
Deputy Secretaries or Agency Deputy Directors	250
Judges; Commissioners (full-time); Assistant Secretaries; Division Chiefs,; Directors	200
Branch Heads; Assistant Division Chiefs; Assistant Directors	175
Attorneys; Doctors; Field Office Supervisors	150
Professionals (Supervisory, Private Office)	126
(Supervisory, Open Office)	120
Professionals (Non-supervisory, Private Office)	108
(Non-Supervisory, Open Office)	90
Secretaries; Drafting Stations (CAD)(Conventional Office)	90
(Open Office)	81
Word Processor and Clerical Stations (Conventional Office)	60
(Open Office)	56
Conference Rooms (Per Person)	22
Reception/Waiting Rooms (1-15 Persons, Per Person)	15
(Over 15 Persons, Per Person)	10

NOTES:

1. Space standards indicated above include normal furniture and equipment. Additional space may be allowed for unusual furniture and equipment requirements if justified.
2. Enclosed offices should be a minimum of 100 NASF regardless of classification of occupant.
3. The above standards do not apply to **academic** personnel in institutions of higher education. Refer to higher education space guidelines.
4. Allow an additional 7 NASF per file cabinet in open office areas.

TABLE 2

**Building Efficiency Factors
Various Building Types
Gross/Net Efficiency Rate & Net/Gross % Efficiency**

<u>Building Type</u>	<u>Efficiency Factor Range</u>	<u>Mid-Point</u>
Office, non-University	1.35 (75%)- 1.50 (67%)	1.42 (70%)
Administration/Office - University	1.67 (60%)- 1.82 (55%)	1.74 (57%)
Library	1.52 (66%)- 1.67 (60%)	1.60 (62%)
Classroom	1.65 (61%)- 1.85 (54%)	1.75 (57%)
Science (Undergraduate)	1.65 (61%)- 1.85 (54%)	1.75 (57%)
Science (Research)	1.72 (58%)- 1.92 (52%)	1.82 (55%)
Medical (Teaching)	1.75 (57%)- 1.95 (51%)	1.85 (54%)
Dormitory	1.33 (75%)- 1.54 (65%)	1.43 (70%)
Dining Hall, Kitchen	1.40 (71%)- 1.60 (62%)	1.50 (67%)
Student Union	1.60 (62%)- 1.75 (57%)	1.67 (60%)
Performing Arts, Fine Arts	1.75 (57%)- 1.95 (51%)	1.85 (54%)
Theater, Concert Hall, Auditorium	1.45 (69%)- 1.60 (62%)	1.52 (66%)
Gymnasium	1.40 (71%)- 1.50 (67%)	1.45 (69%)
Patient Health Facility	1.50 (67%)- 1.60 (62%)	1.55 (64%)
Armory	1.25 (80%)- 1.35 (75%)	1.30 (77%)
District Court, MSC	1.60 (67%)- 1.70 (59%)	1.65 (61%)
State Police Barrack	1.50 (67%)- 1.60 (62%)	1.55 (64%)
Detention Facility	1.60 (62%)- 1.70 (59%)	1.65 (61%)
Maintenance Shop	1.25 (80%)- 1.35 (75%)	1.30 (77%)
Garage (Vehicle Support)	1.15 (85%)- 1.25 (80%)	1.20 (83%)
Park Comfort Sta. Shower Bldg.	1.30 (77%)- 1.40 (71%)	1.35 (75%)
Visitors Center, Concession,	1.40 (71%)- 1.50 (67%)	1.45 (69%)

DIVISION II PROCEDURES

1. PRE-DESIGN CONFERENCE

- 1.1 PURPOSE: As soon as practicable after the Architect/Engineer (A/E) has been assigned a project, the OFP Project Manager will call a conference to initiate the first general review and discussion of the project. This meeting will include the A/E, a representative of the Using Agency, the OFP Project Manager, and the OFP Design Team Personnel.
- 1.2 TOPICS: At this meeting, the following will be furnished and/or reviewed with the A/E:
- a. Procedure Manual for Professional Services.
 - b. DGS Project Number.
 - c. Program: the approved project Program.
 - d. Lead-Based Paint: the statements in the approved program addressing the presence or absence of lead-based paint.
 - e. Funds: total funds available for the project.
 - f. Schedules/Estimates: the form and frequency of submission of Project Progress Schedules, DGS Cost Estimate Worksheets, Tabulations of areas-volume-efficiency, Project Description Sheets, etc., for all types and phases of projects.
 - g. Using Agency Personnel: the names and phone numbers of using agency personnel with whom the A/E may coordinate details.
 - h. DGS/OFP Personnel: the names of DGS/OFP staff personnel with whom the A/E will coordinate all work.
 - i. Available Information: all site, utility, topographic and masterplan information as may be available (if additional information is required, it must be requested in writing by the A/E).
 - j. Site Visit: date and authorization for site visit.
 - k. Permits: licensing and permits (Federal, State, Local, etc.).
 - l. Phase Schedule: a schedule with all phases of the A/E contract including but not limited to the following start and completion dates:
 - .Schematic Design
 - .DGS/UA Schematic Design Review
 - .Design Development
 - .DGS/UA Design Development Review
 - .Construction Documents
 - .DGS/UA Review-50% CD, 95% CD, & 100% CD
 - .Bidding & Negotiation
 - .Construction Administration
 - m. Review Drawing Distribution: for each review submittal, the A/E will be responsible to distribute the number of review sets to the respective agencies as identified on Attachment #2.

- n. Additional Information: determine any additional information which the A/E may need to complete the Schematic Phase.
 - o. Special Policies: any special DGS policies applicable to the project, e.g. roofing, energy conservation.
- 1.3 AVAILABLE DATA: In renovation, alteration and addition projects, such data as may be available on the existing facilities will be furnished to the A/E. The A/E must visit the site of the project and become familiar with the use, operational conditions, and limitations of said site and perform sufficient excavations or obtain measurements and other information relative to existing improvements as provided in the project program.
- 1.4 PROJECT DESIGN REVIEW MEETINGS: The A/E and appropriate consultants will attend review meetings at DGS to discuss comments regarding design submissions. The Using Agency will be represented at the meetings. Meetings will be scheduled at the conclusion of each design phase and as needed.
2. PHASE I - SCHEMATICS
- 2.1 REQUIREMENTS: The following are required for all projects unless waived by the Assistant Secretary, OFP:
- a. Transmittal letter with submission package
 - b. Schematic Design Drawings
 - c. Project Description Sheet (3 copies, see Attachment #6)
 - d. Narrative Description - Architectural, site improvements and an engineering analysis of structural, mechanical, electrical & civil systems (3 copies)
 - e. Project Progress Report (3 copies, see Attachment #5)
 - f. Cost Estimate Worksheets (3 copies, see Attachment #3)
 - g. Summary - Areas-Volume-Efficiency (3 copies, see attachment #4)
 - h. Building Code Design Data (3 copies, see Attachment #10)
- 2.2 ALTERNATIVE ENERGY SOURCES: A narrative description of at least four (4) alternative HVAC system concepts and energy sources shall be submitted. One alternative should be a geothermal heat pump system. The narrative shall focus on the variety of systems that may be needed to meet the program's requirements and for securing comfortable space environment. It shall also address considerations for implementation of energy conservation, utility company rebates, individual space temperature control and the major equipment selection.
- 2.3 SCHEMATIC LAYOUT or a single line floor diagram for alternative systems shall be submitted illustrating system concepts, including all related equipment, control air and water distribution, etc.
- 2.4 REVIEW CONFERENCE: During the preparation of Schematic documents, conferences will be held with the OFP Project Manager, the OFP Design Team, and the designated person representing the Using Agency. Review conference for Schematic documents will be coordinated by the OFP Project Manager.

- 2.5 VALUE ENGINEERING: If a value engineering workshop is scheduled for a particular project, the A/E will conduct a presentation of the Schematic Documents to the Value Engineering Team at the beginning of the workshop. The A/E will not participate in the Value Engineering Workshop, but will attend the wrap-up meeting where the Value Engineering Team presents its findings and cost saving recommendations. The A/E will review and respond to the value engineering recommendations.
- 2.6 COST ESTIMATES: The Cost Estimate Worksheet (CEW) shall be fully developed. Total Project Cost figures shall include the costs as of the anticipated mid-point of construction (use DGS Standard CEW, Attachment #3). The A/E shall not design for, or contemplate funds being available in excess of those stated by the OFP Project Manager Design review submittals with cost estimates in excess of the funds available will be considered unsatisfactory and will be returned without comment for revision.
- 2.7 DRAWING AND PRESENTATION REQUIREMENTS
- a. General: Materials and methods of illustrating the schematic design phase are left to the A/E. All information shall be coordinated and consistent throughout the submission. However, all drawings for presentation to the Architectural Review Board shall be mounted on a firm backing for each display for review.
- b. Cover Sheet: All projects shall have a cover sheet containing the following information (see Attachment #11):
- (1) Name of Project
 - (2) DGS Project Number
 - (3) Location (full address, including County)
 - (4) Secretary of DGS and address of DGS
 - (5) Board of Public Works - Governor, Comptroller, Treasurer
 - (6) Names, addresses and phone numbers of all consulting firms
 - (7) Vicinity Map with north arrow
 - (8) Location Map with north arrow
 - (9) Code Design Information, i.e., date of code, use group, construction classification, fire rating, total gross area, total net area, building height
 - (10) List of Drawings
 - (11) There are no signature blocks required.
- c. Site Plan - Sketch site plan shall be at a minimum scale of 1" = 40'. Architectural scale may not be used. Plan shall show a north arrow, location of existing buildings and structures, roads, walks, utilities, flood plains, wetlands and critical areas within 200 feet of the proposed structure and/or within the limits of the contract. It shall indicate proposed site improvements, grading, access, parking areas, utilities, etc. Where a master plan exists, the site plan

shall show the future buildings adjacent to the proposed project, proposed structures, and/or within the limit of contract, grading, drainage, planting, lighting, access, sediment and erosion control and stormwater management conceptual drawings.

- d. Floor Plans - Floor plan or plans shall be double line and be at a scale of 1/16" = 1'-0" or 1/8" = 1'-0". No other scales shall be used unless written approval has been obtained from the OFP Project Manager. Overall dimensions shall be shown. Plans shall show door, window, elevator, stair corridor and exit locations. Major rooms, areas or space shall be appropriately identified by name, actual net square footage, and programmatic net square footage. Each floor plan shall contain a note below the plan, indicating the approximate gross square feet and the net assignable square feet for each floor, including basements, mechanical floors, penthouses, etc. The first floor plan in the case of multiple story buildings shall contain a summary for the entire building. (See Division I, paragraph 12)
- e. Elevations - Block elevations of all sides shall be at a scale of 1/16"=1'-0" unless otherwise approved in writing by the OFP Project Manager.
- f. Sections - Two building sections are required: (1) a Longitudinal Section and (2) a Transverse or Cross section of the building. If the building has a variety of unique spaces with varying heights and/or shapes the A/E shall supply as many sections as is necessary to clearly convey the schematic design intent of the space or building, etc. Sections shall be submitted at the same scale as the Floor Plans and Elevations.
- g. Dates/Project No.: Dates must be shown on all drawings. with revision dates when applicable. DGS Project Number and title shall be shown in the bottom right hand corner and scale shall be noted. If more than one scheme is prepared, they shall be noted "Scheme No.____".
- h. Sheet size: Drawings shall be 24" x 36". Should circumstances of plan make the use of a larger sheet mandatory, inquiry shall be made to the OFP Project Manager to determine the size that may be acceptable. However, drawings shall neither be smaller than 24" x 36" nor larger than 30" x 42".
- i. Text: Text on drawings shall be legible and minimum 1/8" in size.

3. PHASE II - DESIGN DEVELOPMENT

3.1 REQUIREMENTS: The following are required for all projects unless waived by the Assistant Secretary, OFP:

- a. Transmittal: Transmittal letter with submission package
- b. MDE Transmittal: Transmittal letter from MDE with signatures stating that the project has been submitted for MDE review (required for projects involving site work or hazardous and toxic waste)
- c. Sediment Control: Preliminary sediment and erosion control & stormwater management computations and plans

- d. "Marked-up" schematic review documents
 - e. Design Development Drawings
 - f. Outline Specifications
 - g. Project Description Sheet (3 copies)
 - h. Project Progress Reports (3 copies)
 - i. Cost Estimate Worksheets (3 copies)
 - j. Summary - Areas-Volume-Efficiency (3 copies)
 - k. Building Code Design Data (3 copies)
 - l. Life Cycle Cost/Energy Conservation Analysis (3 copies)
 - m. Preliminary Electrical Calculations 1 copy per paragraph 3.7)
 - n. Geotechnical Report: Completed Geotechnical Report (See Division 1, paragraph 13.5)
- 3.2 REVIEW CONFERENCE: During the preparation of Design Development Drawings, conferences will be held with the OFP Project Manager, the OFP Design Team, and the designated person representing the Using Agency. Review conference for Design Development Drawings will be coordinated by the OFP Project Manager.
- 3.3 VALUE ENGINEERING: If a value engineering workshop is scheduled for a particular project, the A/E will conduct a presentation of the Design Development Documents to the Value Engineering Team at the beginning of the workshop. The A/E will not participate in the Value Engineering Workshop, but will attend the wrap-up meeting where the Value Engineering Team presents its findings and cost saving recommendations. The A/E will review and respond in writing to the value engineering recommendations.
- 3.4 COST ESTIMATE: An updated cost estimate shall be prepared. The A/E shall not design for, or contemplate funds being available in excess of those stated by the OFP Project Manager (See Division I, paragraph 9) Design review submittals with cost estimates in excess of the funds available will be considered unsatisfactory and will be returned without comment for revision.
- 3.5 DRAWINGS REQUIREMENTS:
- a. Cover Sheet: All projects shall have a cover sheet containing the following information (see Attachment #11):
 - (1) Name of Project
 - (2) DGS Project Number
 - (3) Location (full address, including County)
 - (4) Secretary of DGS and address of DGS
 - (5) Board of Public Works - Governor, Comptroller, Treasurer
 - (6) Names, addresses and phone numbers of all consulting

firms

- (7) Vicinity Map with north arrow
 - (8) Location Map with north arrow
 - (9) Code Design Information, i.e., date of code, use group, construction classification, fire rating, total gross area, total net area, building height
 - (10) List of Drawings
 - (11) There are no signature blocks required.
- b. Site Plan: Sketch site plan shall be at a minimum scale of 1" = 40.0'. Architectural scale may not be used. Plan shall show a north arrow, location of existing buildings and structures, roads, walks, utilities, flood plains, forest stands, wetlands and critical areas within 200 feet of the proposed structure and/or WITHIN THE LIMIT OF CONTRACT. It shall indicate existing and proposed contours as necessary, proposed site improvements, grading, sediment control, stormwater management, access, parking areas, new and existing underground utilities and services including point of entry into building. Where a master plan exists, the site plan shall show the future buildings adjacent to the proposed project.
- c. Building Code Analysis Table and Means of Egress Plan Drawing:
1. A building code analysis tabulation shall be provided for all buildings and shall include the following:

Applicable Codes
Use Group Classification
Construction Type
Building Area and Height Limitation
Fire Resistance Requirements
Specific Use Area Separation
Occupant Load
Egress Capacity Calculation
Travel Distance
 2. For projects greater than 10,000 square feet a means of egress plan highlighting the building code analysis shall also be provided. Plan may be a single line drawing with all major rooms, corridors, stairs, elevators, fire separations/smoke partitions, etc. identified and directional egress arrows and travel distances shown. For multi-story buildings, each floor shall have a plan containing all the information as stated above.
 3. For small projects the building code analysis may be on the Cover sheet or the first architectural plan. For larger projects, a separate drawing shall be included at the start of the architectural plans in the contract drawings.
 4. Building code analysis and means of egress plan are required for design development and all later contract document submissions.

- d. Floor Plans: Floor plan or plans shall be double line, be at a scale of not less than 1/8" = 1'-0" and contain a north arrow. Plans shall show door, window, elevator, stair, corridor and exit locations. Major rooms, areas or space shall be appropriately identified by name and gross square footage. Each floor plan shall contain a note below the plan indicating the approximate gross square feet and the net assignable square feet for each floor, including basements, mechanical floors, penthouses, etc. The first floor plan in the case of multiple story buildings shall contain a summary for the entire building.
- e. Elevations: Elevations of all sides shall be at a scale of not less than 1/8" = 1'-0". These elevations shall be developed to a sufficient degree to establish character of design, materials, textures and color.
- f. Sections: Sections through building, walls, etc. shall be at a large enough scale to illustrate floor to floor heights, ceiling heights, changes in elevations, typical construction, etc.
- g. Dates/Project No. must be shown on all drawings with revision dates when applicable. DGS project number and title shall be shown in the bottom right hand corner and scale shall be noted. If more than one scheme is prepared, they shall be noted "Scheme A," B," etc., as applicable
- h. Sheet size: Drawings shall be 24" x 36". Should circumstances of the plan make the use of a larger sheet mandatory, inquiry shall be made to DGS/OFP to determine the size that may be acceptable. However, drawings shall neither be smaller than 24" x 36" nor larger than 30" x 42".
- i. Engineering Drawings: Drawings shall be submitted at the DD Phase and as a minimum shall consist of single line drawings of each system, i.e. Structural, Civil, Plumbing, Heating, Ventilating, Air Conditioning and Electrical Distribution. Drawings shall show equipment layouts for specialized rooms such as laboratories; mechanical rooms, electrical rooms, kitchens, food serving areas, etc. Lighting, receptacle, telephone and special systems layouts are also required. Single line drawings shall be of sufficient detail as to convey the intent of the systems.
- j. Mechanical Drawings: Building plans showing proposed locations for HVAC, plumbing and fire protection equipment in main mechanical rooms and elsewhere inside and outside the building and on the roof shall be submitted. The submittal shall address space adequacy to accommodate service and removal of equipment, including equipment suspended above ceiling. Schematic layout, floor diagram or single line drawings for the HVAC, plumbing and fire protection systems, based on life cycle costing analysis showing the various components (air and water distribution, controls, etc. A list of energy efficient equipment shall be provided. The submittal shall be in sufficient detail as to convey the intent of the selected system and its performance.
- k. Electrical Drawings: Site Plan showing the primary telephone/fiber and electric power lines and their manholes, utility transformer location, and the generator location. Building plans showing both proposed exterior and interior

lighting fixture layout; all wiring devices, such as receptacles, telephone/data, and lighting switch locations; special systems layout, such as fire alarm/security, and public address system. Single line power and fire alarm riser diagrams with sufficient information shall be included. A proposed blank panel, switchgear and motor control center schedule. No circuiting is required for this submission.

- l. Life Cycle Cost Analysis: A study of not less than four approved alternative HVAC systems shall be submitted substantiating the selection of HVAC systems and energy sources, according to the Procedure for the Implementation of Life Cycle Cost Analysis and Energy Conservation. One of the four methods should include a geothermal heat pump system.
- m. Preliminary Stormwater Management: Plans shall be submitted at the DD Phase.
- n. Text: Text on drawings must be legible and 1/8" minimum size.

3.5 OUTLINE SPECIFICATIONS

- a. Copies: Outline Specifications for Architectural, Structural, Site Improvements, Civil, Mechanical and Electrical work are to be submitted with each presentation.
- b. Content: The Outline Specifications shall clearly define all components of each of the systems and all materials that are intended to be used on the project. Outline specifications for HVAC, plumbing, fire protection and underground utilities shall clearly define the components of each system, as well as all materials and methodology of installation.
- c. HVAC/Plumbing Narrative: A narrative description of HVAC and plumbing systems, equipment and controls as per Life Cycle Cost Analysis for all spaces in the building, including provisions for implementation of energy conservation.

3.6 ELECTRICAL CALCULATIONS:

- a. Requirements: One copy of the following preliminary calculations are to be submitted with the DD presentation:
 - (1) Load and demand analysis
 - (2) Load analysis for stand-by power systems
 - (3) Lighting power budget per latest revisions of ASHRAE/IES 9.01
 - (4) Lighting foot-candle calculations for the major areas.
 - (5) Lightning risk assessment per NFPA 78, Appendix I
- b. Format: Calculations should be on applicable forms or in an accepted format. All references used in developing the calculations shall be identified.

- 3.7 MECHANICAL CALCULATIONS: One copy of building and system load calculations of HVAC and plumbing systems shall be submitted.
- 3.8 MEETING: Following submission and review of Design Development Documents, a meeting will be held between DGS, the Using Agency and the A/E. The meeting will be coordinated by the DGS/OFP Project Manager.

4. PHASE III - CONSTRUCTION DOCUMENTS

- 4.1 PREPARATION: The A/E shall proceed with the preparation of construction documents (CD's) only upon receipt of written authorization by the OFP Project Manager.
- 4.2 CONFERENCES: During the development of CD's, conferences will be held as needed with the OFP Project Manager, the OFP Design Team, the designated person representing the Using Agency, and the A/E. Conferences shall be scheduled through the OFP Project Manager. Minutes of these meetings will be prepared and distributed by the A/E. (see Division I, paragraph 6)
- 4.3 REQUIREMENTS: Initial CD Review Submission (Approximate 50% Completion)

a. At this stage of completion of CD's, the A/E shall submit the following to the OFP Project Manager for review:

- 1. Transmittal: Transmittal letter with submission package
- 2. MDE Transmittal: Transmittal letter from MDE with signatures stating that the project has been submitted for review (required for projects involving site work and utility work)
- 3. Construction Documents: 50% Complete Drawings
- 4. Specifications: Draft copies shall be indexed and securely bound with durable covers
- 5. Project Description Sheet (3 copies)
- 6. Cost Estimate Worksheet and a breakdown of costs in CSI format with a summary of the 16 Divisions (3 copies)
- 7. Summary - Areas-Volume-Efficiency (3 copies)
- 8. Building Code Design Data Form (3 copies)
- 9. Electrical Calculations (One copy per paragraph 4.3 c)
- 10. Mechanical Calculations (One copy per paragraph 4.3c)
- 11. Stormwater Management plan(s), specifications and computations
- 12. A "marked-up" Design Development Review Documents
- 13. CITS specification/bid package (See paragraph 4.8)

- b. Drawings: For Architectural and Engineering Drawings, 50% CD Submission is defined as 50% completion of each tracing that will constitute the final set of CD's. At this phase of design, the A/E will mark review sets with "FOR REVIEW ONLY, NOT FOR CONSTRUCTION" or equivalent. For Architectural and Engineering Specifications, 50% CD Submission is defined as a Draft Copy of the Final CD Specifications including edited specifications of all sections related to the project. Master specification sections will not be acceptable.
- c. Electrical Calculations
 - 1. One copy of the following calculations are to be submitted with the 50% CD's. Those calculations previously submitted at the DD phase shall be updated for this submission:
 - (a) Load and demand analysis
 - (b) Load analysis for stand-by power systems, including sizing calculations for stand-by equipment
 - (c) Lighting power budget per latest revision of ASHRAE/IES 90.1
 - (d) Short circuit analysis using ohmic or per-unit method depending on complexity of the system (Reference IEEE Transactions on Industry and General Applications, Vol. 3, Number 2, March/April 1967)
 - (e) Voltage drop analysis
 - (f) Power factor correction
 - (g) Lighting calculations (interior and exterior)
 - (h) Pole classifications, guy vector diagrams and guy strength when overhead transmission systems are involved.
 - 2. All calculations are to be presented in an organized format; all references used in the preparation of calculations shall be noted.
- d. Mechanical Calculations: Finalize load calculations of HVAC and Plumbing Systems, and equipment selection. Provide all input values used in the calculations such as design temperatures, occupancies, U or R values, etc.
- e. Site Improvement Drawings: 50% CD Submission is defined as 50% completion of each tracing that will constitute the final set of CD's, showing all existing and proposed conditions, materials, structures, fixtures, elements, etc., in sufficient detail to establish location, alignment and grade. The A/E will mark review sets with "FOR REVIEW ONLY, NOT FOR CONSTRUCTION" or equivalent. For Site Improvement Specifications, 50% CD Submission is defined as a Draft Copy of the Final Specifications.
- f. Conference: Following review of the submission, the OFP Project Manager coordinating the project will schedule a

conference with the A/E, the OFP Design Team, and a representative of the using agency to review comments with the A/E and his staff.

- g. Critical Path Method Schedule: At the above review meeting the A/E along with the OFP Project Manager and Construction Division personnel, and the Using Agency representative will review the requirement for a Critical Path Method (CPM) construction schedule to be submitted by the prospective bidder. CPM's will be required on all construction projects unless the dollar value and nature of work clearly demonstrates no need for a CPM. During the discussion of the CPM Schedule, significant milestone activities necessary for control and phasing of the project will be identified and incorporated into the construction contract requirements. Project start date and end dates will determine which tasks are on the critical path. CPM requirements shall be coordinated with and not conflict with General Conditions clause 7.06 Progress Schedule - Delays.
- h. DGS Approval: Following the 50% CD conference, the A/E may continue with the preparation of CD's with WRITTEN approval of the OFP Project Manager.
- i. MDE Approval: Approval of the Sediment and Erosion Control and Stormwater Management Plans by the Maryland Department of the Environment in accordance with Division I, Paragraph 14 of this manual is required in this phase. A copy of the MDE approval or comment letter is required to complete this review phase.
- j. Earthwork Cost Estimate: A/E shall itemize in the cost estimate earthwork quantities (topsoil cut & fill) and any unusual conditions such as rock excavation or unsuitable materials.

4.4 CONTRACT DRAWINGS - GENERAL REQUIREMENTS:

- a. CADD: A/E's shall be encouraged to produce contract documents on CADD (Computer-Aided Design & Drafting) whenever feasible. If generated by CADD, similarly prepared documents shall be required from all disciplines.
- b. Material: Contract drawings must be on mylar drafting film. Under no circumstances will final bid or as-built drawings made on paper be accepted. Reproducible prints are not acceptable in lieu of cloth or mylar drafting film without prior approval in writing from the OFP Project Manager.
- c. Scale of Drawings
 - (1) Site plans shall be at a scale of 1" = 40' unless, due to unusual circumstances, another scale is specifically authorized in writing by the OFP Project Manager. Architectural scales may not be used for Site Plans.
 - (2) Floor plan or plans for contract drawings shall be double line and at a scale of 1/8" = 1'-0". No other scales shall be used for overall building floor plans unless written approval has been obtained from the OFP Project Manager.
 - (3) Building elevations of all sides shall be at a scale

of 1/8" = 1'-0" unless otherwise approved in writing by the OFP Project Manager.

- (4) All sheets must contain both written and graphic scales.
- d. Drawing Size: Sheet size for drawings shall be 24" x 36". Should circumstances of plan make the use of a larger sheet mandatory, inquiry shall be made to DGS/OFP to determine the size that may be acceptable. However, drawings shall neither be smaller than 24" x 36" nor larger than 30" x 42".
- e. Lettering size shall be a minimum 1/8". All line work shall be of sufficient density to provide uniform reproduction and photographic quality. When using "Prestype," or similar material, a workable fixative shall be applied to eliminate peeling. When lettering, shading or marking on the reverse side of drawings, a double matte finish polyester drafting film shall be used or the reverse side of the drawing shall be properly prepared prior to its use.
- f. There shall be a cover sheet accompanying each set of drawings (see Attachment #11).
- g. Title and signature block: shall be either Option #1 or Option #2 (see Attachment #12). The following items shall be included in the title block:
 - (1) Title of Sheet - such as "FIRST FLOOR PLAN", "FINISH SCHEDULE," etc.
 - (2) Title of Project as stated in the contract
 - (3) Project Number - The DGS Project Number must appear on all drawings, specifications, contracts, shop drawings and correspondence pertaining to the job
 - (4) Date - This is the date drawings are completed
 - (5) Drawing numbers shall be given to all sheets. All drawing numbers shall be divided into groups according to disciplines and shall have a letter prefix for that group e.g. A for architectural, C for civil/site, S for structural, M for mechanical, and E for electrical. If a project involves drawings for specialty areas such as data/communication or food service, an appropriate discipline prefix for sheet numbering shall be recommended to the OFP Project Manager for approval. In addition there shall be a sheet ___ of ___ for each sheet submitted for the project.
 - (6) Location of job, as for example - Springfield State Hospital, Sykesville
 - (7) Revisions
 - (8) Space for DGS/OFP approval. On the authorization of the OFP Project Manager, this requirement may be deleted.
 - (9) Space for Using Agency approval. On the authorization of the OFP Project Manager, this requirement may be deleted.

- (10) Architects' and Engineers' names, seals, etc. may be placed to the left of the above title arrangement or in other locations as made necessary by the drawing.
 - (11) In addition to placement of seals, the Primary A/E must sign all drawings under his Seal. Consultants to the primary Architect/Engineer must sign all drawings prepared by their office under their seal.
- h. Cover Sheet: All projects shall have a cover sheet containing the following information (see Attachment #11):
- (1) Name of Project
 - (2) DGS Project Number
 - (3) Location (full address, including County)
 - (4) Secretary of DGS and address of DGS
 - (5) Board of Public Works - Governor, Comptroller, Treasurer
 - (6) Names, addresses and phone numbers of all consulting firms
 - (7) Vicinity Map with north arrow
 - (8) Location Map with north arrow
 - (9) Code Design Information, i.e., date of code, use group, construction classification, fire rating, total gross area, total net area, building height
 - (10) List of Drawings
 - (11) There are no signature blocks required if they are provided on the drawing sheets. If the option is authorized to delete state official signatures from the drawing sheets, signature lines for state officials shall be provided on the cover sheet.
- i. Site Plans
- (1) Use 1"= 40', unless due to unusual circumstances another scale is specifically authorized in writing by the OFP Project Manager.

Architectural scales may not be used. The limit of the work must be accurately identified and located.
 - (2) Plans shall include locations of all new and existing buildings and structures, roads, walks, utilities, flood plains, wetlands and critical areas, etc. It shall indicate existing and proposed contours. Where a master plan exists, the plan shall show the future buildings adjacent to the proposed project.
 - (3) Complete Sediment and Erosion Control and Stormwater Management Plan(s) as required by MDE shall be submitted at each design phase after schematics, including Engineer's Certification and DGS Certification. (See Division I, paragraph 14.5)
- j. Plans and Elevations

- (1) Scale of Drawings: Unless otherwise permitted by the OFP Project Manager, scale of building plans or details shall not be less than 1/8" = 1'-0". All drawings shall have a graphic scale for each scale used on the drawing.
- (2) Floor Plans: The plans shall show complete arrangements of all spaces, with their relation to structural, mechanical, and electrical clearly indicated. Structural, Plumbing, Heating, Ventilating and Electrical Plans shall be developed to indicate and show complete systems to be used. All ductwork shall be double line except in areas where not more than one duct is shown. Provide complete temperature control schematics and detailed operating sequences.
- (3) Elevations: The elevations shall show and clearly indicate all design elements and the materials to be used.
- (4) Sections and Details: Sections and details shall indicate any and all requirements of the structure or design together with properly shown story heights.
- (5) Drawings shall contain keys to materials, symbols and abbreviations, and sufficient schedules (finishes, doors, windows, louvers, HVAC units, electrical panels, lighting, plumbing fixtures, etc.), so as to provide the proper organization and coordination of drawings with specifications.
- (6) On the first sheet of the mechanical and electrical drawings the following information shall be included:
 - a. Heating - Total heat loss for the building in BTUs, Ventilation load in BTUs, domestic hot water load in BTUs, heating design temperatures inside and outside.
 - b. Cooling - Total heat gain for building in BTUs, ventilation load for building in BTUs, indoor/outdoor temperature conditions/humidity.
 - c. Plumbing - Total plumbing fixture units, domestic water consumption maximum demand in gph, maximum gas consumption in cu ft/hr.
 - d. Electrical - Total electrical load in KVA, total lighting and receptacles in KVA, Total power in KVA, largest motor H.P., estimated emergency power demand in KVA, and the type and size of stand-by power unit(s).
 - e. Telecommunications - (as appropriate) System description and features, and interface definitions
- (7) Structural Notes that include the following shall be placed on one of the structural drawings:
 - a. Design Dead Load Data including, Partition Load and Live Load for each and every area of the building, including the roof. Allowances shall be included, wherever applicable, for additional loads due to mechanical equipment, piping, ceilings, etc.

- b. Design bearing value for all spread footings and caissons, and bearing load for all piles
 - c. Concrete strength required for each part of the building
 - d. Steel yield point strength for all reinforcing and structural steel
- (8) Plans and specifications for excavation, retaining structures, dewatering, etc., where required, shall be included in the contract documents.
 - (9) Demolition Drawings: Where demolition work is required, the plan shall clearly show existing conditions, what work is to be removed, and a reference provided to identify the proposed work for the same area. If lead is identified, the demolition plan and related notes shall describe the location and refer to the specification section which shall specifically describe or give the necessary regulation for the removal and disposal of potential lead hazards.
 - (10) All drawings shall be prepared with the same orientation.
 - (11) All building spaces shown on the mechanical drawings shall be named on the mechanical drawings. All mechanical work shown or detailed on more than one sheet shall be cross referenced.
 - (12) The use of drawing note tabulations with reference letters or numbers noted on plans and details is not acceptable except in special cases and with the written approval of the OFP Project Manager. Such notes should be written out adjacent to the respective architectural or structural element, mechanical equipment item or mechanical system component, or electrical equipment item or electrical system component.
 - (13) Room titles must be placed directly on the related spaces without interfering with any other dimensions or data.

4.5 SPECIFICATIONS FOR CONSTRUCTION

- a. General Requirements:
 - (1) A/E shall follow the Construction Specifications Institute Sixteen Division Master format and Three Part Section format.
 - (2) Where trade names or proprietary items are identified, reference shall be made to "approved equal".
 - (3) Whenever brand name products are included, at least three acceptable brands shall be named, if possible.
 - (4) Hardware schedules are required in the specification. They shall be open to full competition. The A/E shall determine the requirements of the Using Agency for the Master Key System.

- (5) Generalized all-inclusive ("grandfather") clauses must be avoided. Be specific in such items as "Scope." Scope should enumerate items to be included.
- (6) Reference shall be made to the latest DGS General Conditions in appropriate divisions of the specifications.
- (7) One page of the Specifications (following the cover page) shall contain the Project Title, DGS Project Number, the seal and signature of the primary A/E, and the seal and signature of each consultant to the primary A/E.
- (8) When electrical high voltage work (over 600 volts) is required in construction of a project, the services of an independent high voltage electrical testing agency shall be utilized. The project specifications shall read as follows where appropriate: "The contractor shall secure and pay for the services of a high voltage electrical inspection agency to test and inspect all electrical high voltage components of the system prior to being energized. The tests and inspections shall follow the procedures as established by NETA in their specifications for acceptance testing. The contractor shall submit a copy of the test results and an analysis of these results prepared by a registered Professional Engineer to the Engineer of Record and to DGS/PMD within ten days of the testing.

Repeat testing due to unacceptable test results and/or inspection findings shall be the sole responsibility of the contractor."
- (9) The following statement shall be included in the appropriate sections of the electrical specifications: "An electrical certificate from an independent (non-governmental) electrical inspection agency approved by the State of Maryland Fire Marshal must be submitted to the Department of General Services prior to or with the final payment invoice. The inspection certificate shall be used in lieu of a county or municipal permit for electrical work performed on property belonging to the State of Maryland. The electrical sub-contractor shall file with the independent inspection agency, and pay all fees associated with such filing, at the start of construction so that adequate rough-in inspection can be made during the course of work."
- (10) Use of frequent references to other specification documents shall be avoided wherever possible. (e.g. reference to County, SHA or WSSC specifications). If such specifications govern, the significant references shall be reprinted in total.
- (11) The following requirements shall be included in the appropriate section of the mechanical specifications for projects that involve the installation or service of heating, ventilating, air conditioning, or refrigerating systems:

- (a) A mechanical contractor bidding as prime contractor shall be a Maryland-licensed HVACR Master or Master Restricted contractor who is qualified in the areas of work included in the project.
 - (b) The successful contractor shall agree to employ only individuals who hold valid licenses issued by the State HVACR Board of the Department of Labor, Licensing And Regulation to provide, or assist in providing, heating, ventilating, air conditioning, or refrigerating system installation or service required for the project.
 - (c) If the successful contractor subcontracts any or all of the heating, ventilating, air conditioning, or refrigerating system installation or service required for a project, the subcontractor must possess the appropriate license required and issued by the State HVACR Board.
 - (d) All heating, ventilating, air conditioning, and refrigerating system subcontractors shall consistently use only individuals who hold the appropriate licenses issued by the State HVACR Board to provide or assist in providing heating, ventilating, air conditioning, and refrigerating system installation or service required for a project.
- b. Cover Page of Project Manual: The required information is shown on the attached sample (See Attachment #13). The A/E shall include a "mock-up" with the review sets of specifications as the names of various state officials change from time to time. A seal page is required.
- c. Table of Contents of Project Manual:
- (1) The Table of Contents shall be complete, listing all division numbers with division titles as shown by the CSI. After each division number and title, indicate the page numbers where the specification is to be found. If the project does not include any work in a specific division show "none" in the column of page numbers. It is preferred that sub-divisions or "sections" (paragraphs) be numbered or lettered in consecutive order, rather than the four digits and decimals shown by the CSI.
 - (2) Sequence of Project Manual contents shall be as follows:
 - Title Page - A/E Seals & Signatures - Table of Contents - List of Drawings - Instructions to Bidders - General Conditions - Wage Rates (see Division II, paragraph 4.7) - Division 1 through Division 16.

4.6 INSTRUCTIONS TO BIDDERS AND GENERAL CONDITIONS

- a. Availability: These documents are standard for all projects and are available through the OFP Procurement Division. They may not be altered by the A/E. Supplemental or special conditions may not be used without prior written approval of

the Assistant Secretary, OFP. When Federal Funds are involved, add Federal General Conditions and wage rates.

- b. Job Conditions: Statements relative to unusual job conditions, security requirements, etc., shall be included in Division 1 of the General Specifications.

4.7 PREVAILING WAGE REQUIREMENTS

- a. Projects Estimated to cost \$500,000 or more: All projects which are anticipated to cost \$500,000 or more must contain a prevailing wage scale. This requires the A/E to apply to the Commissioner of Labor and Industry for a wage scale. (see Attachment #9). Application must be made for wage rates 60-120 days in advance of the time the project goes to bid. The A/E must furnish sufficient information to permit complete listing of all crafts. A detailed table of contents from the specifications will normally be sufficient.
- b. Federal Funds: When federal funds are involved, and if federal regulations (Davis-Bacon Act) require the use of a federal prevailing wage schedule, the A/E shall apply for the wage scale. If federal wage scales change from the initial application by the A/E, new rates must be applied for and issued as an addendum. If, after an addendum has been issued on new rates and federal wage rates change within twenty (20) days of the bid date, new wage rates do not have to be applied for. Information on federal wage rates can be obtained from the Federal Register, Procedures for Predetermination of Wage Rates.

4.8 CONSTRUCTION INSPECTION AND TESTING SERVICES (CITS)

- a. CITS Contracts: For those projects for which special construction inspection or quality assurance back-up testing is to be provided by private construction inspection and testing firms (CITF), the required material inspection and testing requirements shall be part of the construction documents.
- b. Contract Monitoring: The A/E shall assist the OFP in the definition of these services; and after award of the contract shall, on behalf of the OFP, monitor the work of both the testing laboratory employed by the contractor and the CITF. Contract monitoring may consist of weekly review of test results and field inspection reports, liaison with CITF, and check of CITF progress payment requisitions for conformity to the estimates of manpower and test requirements.
- c. CITS Proposal Package: The A/E shall furnish to the OFP along with the 50% CD submission a CITS specification/proposal package for this work indicating those contract items requiring materials inspection and testing and the estimated quantity of each. Upon approval by the OFP, the A/E shall resubmit the approved CITS specification package with any changes. These documents shall be developed based upon a format provided by the OFP. CITS specifications shall include and establish all the requirements relative to inspection and testing, such as, qualifications of the inspectors, scope of work, applicable standard test methods and procedures, compliance and acceptance criteria, reports and submittals.

The inspection and testing services may include, but not necessarily be limited to, those for structural steel(both shop and field), concrete, roofing and roofing materials, asphalt, soils, and foundations. These requirements shall be comparable to those specified for the contractor's testing laboratory.

- d. Proposals: The OFP will use the information furnished by the A/E to procure the services of a CITS firm by advertising and soliciting proposals from at least three (3) qualified firms, or by using a pre-approved indefinite delivery contract.

4.9 FINAL CD REVIEW SUBMISSION - (95% COMPLETION)

- a. Requirements: When CD's are 95% completed the A/E shall submit the following to the OFP Project Manager:
- (1) Construction Documents 95% complete Drawings - black or blue-line prints (Note: Review sets must be marked "FOR REVIEW ONLY, NOT FOR CONSTRUCTION" or equivalent).
 - (2) Specifications - indexed and securely bound with durable covers.
 - (3) Construction Bid Form - This form must be approved prior to approval of specifications.
 - (4) Cost Estimate Worksheet and a breakdown of costs in CSI format with a summary of the 16 Divisions - Four (4) copies.
 - (5) Summary Area-Volume-Efficiency Tabulations - Four (4) copies. This submission shall be up-to-date.
 - (6) Project Description Sheet - Four (4) copies. This submission shall be up-to-date.
 - (7) A brief project description including design details such as size, type of building, roof specs, type of construction, HVAC, uses or purposes of building and special design features.
 - (8) Some projects may require additional CDs for review. The A/E shall verify the required number of CDs with the OFP Project Manager prior to submission of the above stated minimum.
 - (9) HVAC and plumbing load calculations - one copy.
 - (10) Electrical Calculations - One copy updated per Division II, 4.3.
 - (11) Electrical Coordination Study - At a minimum, this analysis shall encompass that segment of the distribution system between the origin of utility service and the first level of secondary distribution equipment, or, where service is derived from an existing state-owned distribution system, between the existing primary distribution equipment and the first level of secondary distribution equipment. This study shall include set points for all adjustable protective devices.
 - (12) Sediment and Erosion Control and Stormwater Management

computations (up-to-date).

(13) "Marked-up" 50% CD review documents.

- b. Final Review Meeting: When the 95% CDs have been reviewed by DGS, the OFP Project Manager will arrange a meeting with all concerned OFP staff and the Using Agency. The A/E shall have present his appropriate consultant(s). At this meeting the CDs will be reviewed in total, to such an extent that the OFP and the Using Agency may be assured that upon submission of the Final CDs (Original Tracings), the required signatures may be applied without delay.
 - c. Permits: All necessary permits and/or approvals, save those required of the construction trade necessary to perform the work for making connections to available water and sewer facilities to completely support the project as called for in Division I, paragraph 15, Water and Sanitary Systems.
- 4.10 FINAL CD SUBMISSION (100% COMPLETION) At this stage of 100% completion of CDs, the A/E shall submit the following to the OFP:
- a. "Marked-up" 95% CD review drawings, specifications, proposal forms, etc.
 - b. 100% complete contract drawings - Reproducible Mylar Film Tracings and CADD diskette
 - c. Updated calculations, loads and demands charted
 - d. Camera ready copy of specifications and diskette
 - e. Five (5) sets of half size prints or CADD plots of the contract drawings.
- 4.11 COST ESTIMATE WORKSHEET:(CEW): The above initial and final CD CEW'S shall each show the costs as of a reference date with contingencies, fees, etc., so that each CEW reflects a Total Project Cost at the mid-point of construction. All estimates shall reflect all additions and deletions during the various design phases. (See Division I, paragraph 9).
- 4.12 FINAL APPROVALS: The A/E will secure and submit to the OFP Project Manager final approvals and/or permits from all regulatory agencies and public utilities involved in the project construction: State Fire Marshal's Office; Department of Health and Mental Hygiene; Maryland Department of the Environment; and water, sewer, telephone, gas and electric utilities owners.
- 4.13 A/E CERTIFICATION: The A/E will furnish the certification of the Contract Documents as required in Division I, paragraph 21.
- 4.14 CONSTRUCTION BID FORMS
- a. Language: The language and wording may not be changed; however, the lines for base bids or bids and alternates must be adjusted to apply to the project requirements. When add alternate prices are requested, a short description of the alternate must be included.
 - b. Time of Completion: A/E shall recommend a duration to the OFP Project Manager. The duration proposed by the A/E shall consider such factors as a complexity of the project, long lead time materials, time of year construction will start, etc. The OFP Project Manager will then advise A/E what

duration to use on the bid form.

- c. Unit Prices: When separate prices or unit prices are required, they shall be listed ahead of the Base Bid line. Unit prices will reflect concealed conditions encountered during a project, i.e., conditions in site work, foundations, or reroofing, and will be used to adjust contract higher or lower based upon actual costs during the course of work. When bidding these types of projects, base bid will include lump sum price work plus unit price work with estimated quantities established by the A/E and unit prices provided by the contractor to arrive at the base bid.
- d. Liquidated damages shall be provided for at a rate determined by the OFP Project Manager and indicated on the Construction Bid Form.

4.15 ALTERNATES

- a. Purpose: When authorized by the OFP Project Manager, the A/E shall specify add alternates to be included in bids as may be considered necessary to assure project costs within established budgets. Alternates shall be used to effect a change in the scope of the project or in the materials or methods specified. The following practices shall be followed by the A/E when specifying alternates.
 - (1) Priorities: The A/E shall review all alternates with the OFP Design Team Leader and Project Manager and the Using Agency representative to establish the priority in which alternates will be listed. Add alternates, if accepted with the Base Bid, will be accepted in the order listed on the bid form. Alternates shall normally be all additive in a given bid.
 - (2) Federal Requirements: If the project is federally funded, completely or in part, the Federal Government requirements for Alternates shall be followed.

5. PHASE IV - BIDDING PROCEDURES

- 5.1 INVITATIONS: The OFP will invite contractors who are likely to be interested. The A/E is requested to suggest additional qualified contractors.
- 5.2 ADVERTISEMENT: The DGS Procurement Division will notify the Maryland Contract Weekly and building trade organizations of the request for bids and will distribute contract documents to appropriate trade organizations.
- 5.3 BID DATE: The OFP will determine the time and date for receipt of bids after contract documents are delivered to the OFP, or after fixed delivery time and date is determined.
- 5.4 DISTRIBUTION OF CONTRACT DOCUMENTS: The DGS Procurement Division distributes contract documents to contractors, sub-contractors and suppliers on a non-refundable deposit basis.
- 5.5 PRE-BID CONFERENCE: A pre-bid conference, will be held to review the project prior to bidding. The conference will be attended by the OFP Project Manager, the DGS Procurement Division, the Using Agency representative, the A/E, and interested prospective bidders. It is intended that this conference will permit interchange of questions, answers and ideas so as to minimize

problems during subsequent construction. The A/E shall write minutes of the conference and incorporate issues addressed at the pre-bid conference into an addendum.

5.6 ADDENDA

- a. Interpretation: Only the A/E shall interpret the contract documents during the bidding period. Interpretations shall be given by written instruction only.
- b. Preparation: The A/E shall prepare addenda as necessary during the bidding period and deliver such addenda to the OFP Project Manager for distribution to prospective bidders not less than seven (7) working days prior to scheduled date of bid opening.
- c. If, in the opinion of the Assistant Secretary of the OFP, the number of changes or clarifications necessary are of such an amount that it is in the State's best interest to eliminate any confusion, the A/E shall be directed, at no additional cost:
 - (1) To incorporate the changes or clarification of drawings by producing replacement tracings and providing sufficient copies for distribution.
 - (2) To incorporate the changes or clarifications of specifications by producing replacement pages in sufficient copies for distribution.
 - (3) To insure that changes or clarifications to either the plans or the specifications are readily identified by clouding and numbering.

5.7 BID OPENING

- a. Bids are publicly opened at the DGS Procurement Division Bid Room beginning promptly at the designated time. DGS will notify the A/E and the Using Agency of the time and date of bid opening. The A/E shall be present.
- b. Any bid received after the exact time specified will not be opened.
- c. The A/E will be provided copies of the bids after the bid opening, and shall evaluate the low bid and the low bidder's qualifications and make a recommendation for award in writing to the OFP. Concurrently, the Using Agency will forward their recommendations to the OFP in writing.
- d. If the low bid is 10% greater or less than A/E's estimate, the A/E is required to submit to the OFP an analysis of reasons for the variance. The A/E will review unit prices for reasonableness.

6. PHASE V - CONSTRUCTION

- 6.1 CONTRACT AWARD: After the determination of the successful bidder, the OFP Project Manager will pursue approval of a contract by the appropriate approval board based on contract value. After approval by the Department Procurement Review Board (DPRB) or the Board of Public Works (BPW), DGS will execute a contract with the successful bidder.
- 6.2 PRE-CONSTRUCTION CONFERENCE: Within ten (10) days after approval of award, a work initiation conference will be arranged by the Construction Division of the OFP. The contractor, the OFP Project

Manager, the Using Agency representative, the A/E, the OFP Construction Division Area Supervisor and field inspector for the project, and the MDE representative will be present. At this time all procedures will be clarified. The OFP Area Supervisor will define the construction set of contract documents as the bid set with addenda (if any) and state the dates of each. The A/E is responsible for preparing minutes of this conference.

- 6.3 PROJECT SIGNS: Project signs are required for all projects over \$50,000 and six (6) months duration. The State will provide one project sign for each major entrance to the project. Project signs will comply with the requirements of General Conditions clause 7.02.
- 6.4 PROGRESS MEETING AND PROJECT REPORT
- a. Responsibility: It will be the A/E's responsibility to attend progress meetings and record meeting minutes. Submit minutes within 5 working days following each meeting to the OFP Project Manager for approval. It will be the DGS Inspector's responsibility to see that standardized information is contained in the minutes.
 - b. Scheduling: Progress meetings shall be held at least monthly. On many projects they will be scheduled every two weeks. The progress meeting minutes are to reflect the true intent of the progress meeting. The purpose of the progress meeting is to review the job progress and to resolve any problems that may be impeding the job progress. Problems strictly between the Contractor and the Sub-Contractor shall not be discussed. At each meeting, actual job progress and anticipated work as outlined in the project schedule shall be reviewed. In addition, the following documents will be reviewed:
 - (1) PCO Log (Inspector maintains)
 - (2) Submittal Log (A/E maintains)
 - (3) RFI Log (A/E maintains)
 - (4) Testing Log (Contractor or CITF maintains)
 - c. Requirements: During the construction phase of work, the A/E shall be required to have available at progress or special meetings or for field inspections those members of the design team whose technical expertise is necessary to clarify or reconcile project difficulties. Said personnel shall also be required to furnish to the OFP written reports summarizing said clarification, direction, reconciliation or results of field inspections. The A/E shall include sufficient man-hours of the various disciplines in construction phase services to provide this support on an "on-call/as-needed" basis. No additional compensation shall be made to the A/E over and above the amounts included in the A/E fee unless the object of these events is outside the original contract scope.
 - d. Minutes: The progress minutes are to contain the following information. Items (1) through (7) shall be on the first page of minutes.
 - (1) Project Name
 - (2) Project Number
 - (3) Progress Meeting Number
 - (4) Time and Date of Meeting
 - (5) Project Synopsis:

- Notice to Proceed
- Completion Date
- Contract Calendar Days (Original)
- Revised Contract Calendar Days (including approved time extensions)
- Contract Calendar Days Elapsed
- Contract Calendar Days Remaining
- Percentage of Time Consumed
- Percentage of Job Completion
- Anticipated Completion Date
- Bad Weather Days Requested

- (6) Statement of Any Items Delaying the Project
- (7) Summary of Work Completed to Date
 - Review/Update Project Schedule
- (8) Old Business
 - Old Business Issues Resolved
- (9) New Business
 - Projected Dates to Resolve New Issues
- (10) Review PCO Log
- (11) Review Submittal Log
- (12) Review RFI Log
- (13) Review Testing Log
- (14) Participants
- (15) Time of Adjournment
- (16) Time and Date of Next Progress Meeting

6.5 MATERIALS AND COLORS: At the appropriate time in an early stage of construction, the A/E shall select and coordinate the approval of brick panels, stone samples, concrete colors and textures, paint colors, and all other finishes with the OFP Project Manager. The OFP must also approve any material substitutions.

6.6 CHANGE REQUESTS AND CHANGE ORDERS

- a. Unauthorized Changes: Representatives of using agencies are not authorized to issue instructions of any kind to contractors or A/E's except when such instructions relate to security or operating functions of a correctional institution.
- b. Procedure: Changes requested by the Using Agency must be submitted in writing to the appropriate OFP Project Manager. These will be reviewed with OFP Design Team and Construction Division, who will issue the necessary instructions to the contractor and/or the A/E.
- c. Requirements: For any and all construction related change orders, the Contractor must include a detailed cost proposal to the A/E for review and approval. This proposal shall include an itemized breakdown showing all related material quantities, labor hours, material costs, unit prices, wage rates, labor and material burdens, and all other associated expenses. The A/E is responsible for providing a written cost estimate which independently verifies that the contractor's cost proposal is fair, reasonable, and accurately reflects the proposed changes. The A/E is also responsible for the preparation and transmittal to the OFP

Construction Division of all OFP change order approval forms.

- d. Construction Change Order Approval Form: This form will note the reason for the change order. The change order may be required due to a user request for program change, field condition, omission or error. The OFP may seek to recover costs due to a change order required as a result of an error in the preparation of the documents or an omission in the documents which causes the State to incur a cost it would not have incurred had the documents been correct at bidding.

6.7 If a change order involves construction work deleted from the project or substantially revised during the Construction Phase, and the deletion or revision requires the A/E to render professional services beyond the negotiated Construction Phase services, additional compensation may be requested during the change order approval process. Additional fees applicable to such a change order shall be noted in the space provided on the Change Order Approval Form, and appropriate supporting documentation shall be provided. The request will be considered by the OFP along with the approval review of the change order. If an additional fee related to a construction change order is approved, the A/E shall include the amount on their invoice form as "Additional Fee for CO.#____", to be processed with their next payment request.

6.8 CERTIFICATES OF PAYMENTS

- a. Percentage of Completion: The contractor's representative and the inspector will agree in draft form on the percentages of completion of the various segments. The representative sub-contractors will participate in this effort as deemed necessary by the general contractor and the OFP inspector.
- b. Monthly Estimate: After completing (a) above the general contractor will prepare a typed copy of the monthly estimate on the prescribed form and return it to the field inspector for signature.
- c. Review: When (b) above is completed the contractor will be responsible for submitting the document to the A/E for review and signature.
- d. Submittal: After the A/E has reviewed and approved the monthly requisition, the contractor shall mail it to the Accounting Department, DGS.

7. COMPLETION AND ACCEPTANCE OF PROJECT

7.1 SUBSTANTIAL COMPLETION: When a project or a designated portion thereof nears substantial completion, the inspector will schedule a work list inspection. The Architect, appropriate Design Consultants (i.e. Civil, Mechanical, Electrical, Landscape, Security, etc.) the Using Agency, and the Contractor will participate. A work list will be generated for each category of work (i.e. Architectural, Civil, Mechanical, Electrical, Landscape, Security, etc.).

Each work list will list work not yet completed, work not yet started, and items requiring repairs or adjustment. When the number of items remaining on the work list is insignificant and none of the items remaining would prevent use of the Facility for its intended purpose or would inconvenience the Using Agency by being accomplished after occupancy, the DGS Construction Division will schedule a substantial completion inspection. The entire project will be inspected and all defects or deficiencies observed in the construction or any deviations from the contract documents

will be noted on the punch list. If, in the opinion of the DGS Construction Division, the project is ready for acceptance, a substantial completion inspection report will be issued to the Contractor establishing the date of acceptance and the start of the warranty period. The substantial completion inspection report will be signed by all the representatives.

The A/E's and Consultant's participation in the substantial completion inspection is at the discretion of the DGS Construction Division. For projects accepted in phases the above acceptance sequence (work list inspection, substantial completion inspection) will be repeated for each phase.

7.2 RECORD DOCUMENTS

a. As-Built Drawings

- (1) The Contractor shall submit the field mark-up record set of drawings to the inspector. If acceptable, the drawings will be forwarded to the OFP Project Manager who in turn will forward them to the A/E. The A/E shall receive from the OFP Project Manager the record set of drawings as required by the Contract Documents and revise and so note on the original Contract Drawings the As-Built conditions of the project.
- (2) As-Built drawings shall be marked up by the Contractor in the field on a regular basis to record all changes in the work as they occur, and the exact location of all exposed and concealed pipe runs, valves, plugged outlets, cleanouts, and other control points including electrical conduits and ducts, in such manner as will provide a complete, accurate as-built record. The location of pipes or control points concealed underground, under concrete, in chases or above hung ceilings shall be dimensioned. As-Built drawings shall be neatly marked with colored pencil or ink, and shall be delivered to the Architect, in a condition satisfactory to him, as a condition precedent to final payment to the Contractor.
- (3) As-Built drawings must be corrected original drawings submitted on linen or mylar drafting materials. Reproducible mylar materials are subject to approval by the OFP. No paper-based tracings will be accepted.
- (4) If original drawings are prepared by CADD, As-Built drawings must also be generated on CADD. If CADD is used as the drawing medium, CADD-generated As-Built drawings shall be required from all disciplines.
- (5) Acceptance of As-Built drawings shall be conditional upon OFP approval of materials, quality, completeness and accuracy. The OFP reserves the right to verify As-Built accuracy prior to final payment.
- (6) As-built drawings on Capital Projects shall be turned over to the OFP within two(2) months and on other projects within one (1) month after satisfactory completion of the project. Final payment of the A/E's Phase V fee shall not be made until As-Built drawings and one complete set of contractor's field record set are submitted to the OFP.

- b. Guarantees, Warranties, etc.: It is the responsibility of the A/E to obtain from the Contractor the Guarantees, Roof Bond, Equipment and Maintenance Manuals, Brochures, etc., and forward same to the Using Agency with copy of

transmittal letter to the OFP Project Manager.

- c. Approved Shop Drawings: Throughout the Construction Phase, the A/E shall assemble a complete set of approved shop drawings for the Using Agency. At the time of acceptance of the project by the Using Agency, the A/E shall forward this complete set of approved shop drawings, including one copy of the "As-Built" drawings, referred to in paragraph (a) above, directly to the Using Agency. The A/E shall obtain a written receipt signed by the Using Agency and forward it with the request for final payment of Phase V services to DGS. A copy of the receipt shall be provided to the OFP Construction Division.

8. PHASE VI - POST CONSTRUCTION PHASE (CONTRACTOR'S GUARANTEE PERIOD)

- 8.1 SITE VISITS: During the two year guarantee period, unless otherwise authorized by the OFP Project Manager, the A/E and his design team shall participate in warranty inspections at 6, 12 and 24 months after acceptance of the project. These visits will be

arranged by the OFP Construction Division and shall be in the presence of the Using Agency representative and the OFP Construction Inspector.

- 8.2 REPORTS: The OFP Construction Inspector will file the DGS Warranty Inspection Report (see Attachment #14) which will list contractual guarantee items, maintenance items and design complaints. In the case of serious design or construction deficiencies, a supplemental written report will be made by the A/E indicating results of visits and will be submitted to the OFP Project Manager.

DIVISION III POLICIES AND PROCEDURES

1. FLOODPLAIN MANAGEMENT CRITERIA FOR FLOOD-PRONE AREAS:

- 1.1 REQUIREMENTS: All proposed project sites (including new construction, major improvements, and site work projects) shall be reviewed to ascertain that a one hundred (100) year floodplain determination has been made and that the source and map used for that determination are cited and attached to the program.
- 1.2 STANDARDS: All activities proposed within tidal and nontidal floodplains, including construction of buildings, grading, or utility work, shall be designed to meet or exceed the standard set forth below.
 - a. Determination: The Maryland Department of the Environment, Water Resources Administration (MDE-WRA) may provide assistance with determining the tidal/nontidal nature of the floodplain. Proposed activities located within nontidal floodplains are also subject to the provisions of Natural Resources Article, Section 8-803, Annotated Code of Maryland, and COMAR 08.05.03.01 et seq.
 - b. Permits: For tidal and nontidal floodplains, permits shall be obtained from the Maryland Department of the Environment, and the Army Corps of Engineers (if applicable).
- 1.3 BUILDING SITE: If a proposed building site is in a tidal or nontidal floodplain, all new construction, manufactured buildings, and substantial improvements shall be:
 - a. Anchored: Designed (or modified) and adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy;
 - b. Materials: Constructed with materials resistant to flood damage;
 - c. Methods: Constructed by methods and practices that minimize flood damage;
 - d. Service Equipment: Constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding; and
 - e. Review: Reviewed by MDE-WRA for consistency with flood damage reduction objectives.
- 1.4 BUILDING SITE: If a proposed building site is in a tidal or nontidal flood plain:
 - a. Sewage Systems: New and replacement sanitary sewage systems are to be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters; and
 - b. Onsite Waste Disposal: Onsite waste disposal systems are to be located to avoid impairment to them or contamination from them during flooding.
- 1.5 NEW CONSTRUCTION: All new construction and substantial improvements (exceeding 50% of market value of structure) of non-residential structures within tidal or nontidal floodplains

shall comply with the following:

- a. Floor Elevation: The lowest floor (including basement) shall be elevated at least one (1) foot above the 100-year flood level; or
 - b. Water tightness: The structure shall be designed to be watertight to at least two (2) feet above the 100-year flood level. Walls shall be substantially impermeable to the passage of water, and structural components shall have the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.
 - 1) A registered Professional Engineer or Architect shall develop and/or review structural design, specifications, and plans for the construction, and shall certify that the design and methods of construction are in accordance with accepted standards of practice; and
 - 2) A record of such certification which includes the specific elevation to which such structures are floodproofed shall be provided to MDE-WRA and indicated on design drawings.
 - c. Fully Enclosed Areas: Areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters.
 - 1) All such designs shall be certified by a registered Professional Engineer or Architect; or
 - 2) The structure shall be provided with a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding. The bottom of all openings shall be no higher than one (1) foot above grade. Openings may be equipped with screens, louvers, valves, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
- 1.7 ZONES VI-30, VE, V: All new construction within Zones VI-30, VE, and V as delineated on the Flood Insurance Rate Map prepared by the Federal Emergency Management Agency (FEMA): shall comply with the following:
- a. Location: Structures shall be located landward of the reach of mean high tide;
 - b. Elevation: The bottom of the lowest structural member of the lowest floor shall be two (2) feet above the 100-year flood level;
 - c. Foundation: Pile or column foundation and structure attached thereto shall be anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously;
 - d. Support: Fill shall not be used for structural support of buildings; and
 - e. Open Space: The space below the lowest floor shall be either free of obstruction or constructed with non-supporting breakaway walls, open wood lattice-work, or insect screening intended to collapse under wind and water loads without causing collapse, displacement, or other structural damage to the elevated portion of the building or the supporting foundation system.

2. STANDARDS OF ETHICAL CONDUCT

- 2.1 CODE: Article III of the Code of Ethics for Executive Branch Officers and employees as promulgated by Executive Order of the Governor dated September 4, 1969 states in part that "It shall be considered unethical for any State officer or employee...to engage in outside employment which may frequently result in conflicts between the private interests of the officer or employee and his official State duties and responsibilities or which impairs or could reasonably be expected to impair his independent judgment in the exercise of his official duties... Failure to conform to the standards of ethical conduct so prescribed may lead to removal from office, termination of employment, or other action as the particular case may require."
- 2.2 CONFLICT: A/E's providing professional services to the State should carefully note the foregoing standards and avoid any action in conflict therewith. Failure to comply with these standards may lead to termination and loss of contract for professional services.

3. CONSTRUCTION IN ALLEGANY AND GARRETT COUNTIES

- 3.1 REQUIREMENTS: A/E's preparing Contract Documents for construction in Allegany or Garrett County shall include the following in the plans or specifications: "The bidder's attention is directed to the requirement by law which requires all Contractors to notify the Bureau of Mines when coal is encountered on any construction project. This notice shall be sent to the following: Maryland Department of the Environment, Water Management Administration, Bureau of Mines, 160 South Water Street, Frostburg, MD 21532.

4. VOLUMETRIC BATCHING AND CONTINUOUS MIXING OF CONCRETE

- 4.1 OPTIONS: Contractors shall have the option of furnishing drum transit mixed concrete according to ASTM C-94, or volumetric batched concrete according to ASTM C-685. It is therefore directed that unless an A/E has a valid objection thereto, all future concrete specifications for State (DGS) projects shall include the provision that a Contractor may supply either transit mixed concrete conforming to ASTM C-94, or upon approval of the A/E, volumetrically batched concrete conforming to ASTM C-685. The A/E shall include such special provisions as may be necessary with the latter specification.

5. STANDARDS FOR NEW ROOFING CONSTRUCTION, REROOFING CONSTRUCTION AND ROOFING SYSTEM GUARANTEE REQUIREMENTS.

5.1 GENERAL:

- a. For all new building projects, the selection of either a steep slope or low slope roofing system shall be based on the results of a 60 year life cycle cost analysis. This analysis shall consider the scope impact on building structural, mechanical and electrical systems required to configure the building for both a steep slope and a low slope roofing system, as well as the maintenance and replacement intervals and costs for both roofing systems.
- b. For roof replacement projects, the selection of the replacement roofing system shall be based on an evaluation of costs associated with factors affecting the proposed system, including span dimension, structural condition, foundation design/capacity, and disposition or accommodation of roof top equipment.
- c. All roofs on new construction shall be pitched to drains or gutters, with the roof slope achieved structurally.

- d. References to national standards documents such as the American Society for Testing Materials (ASTM), American National Standards Institute (ANSI), Factory Mutual System (FM), Underwriters' Laboratories (UL), Building Officials and Code Administrators (BOCA), American Institute of Steel Construction Manual (AISC), Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA), National Roofing Contractors Association (NRCA), National Institute of Standards and Technology (NIST), Asphalt Roofing Manufacturers' Association (ARMA), etc., shall be interpreted to **refer to the most current edition or revision in effect at the time a design is in progress as this takes precedence.**
- e. All materials used for roofing systems shall be asbestos free.
- f. A site visit to verify existing conditions will be made for all roof replacement and roof repair projects to verify existing conditions and dimensions even when as-built drawings are provided. Where composition, thickness or make up of the existing roof system or any of its components cannot be determined by visual means alone, conduct exploratory investigation to include dismantling or opening up a representative portion of the roof system. Patch and make watertight all areas disturbed during investigation.

5.2 STEEP SLOPE ROOFS: Steep roofs with a minimum slope of 2-1/2 inches per foot, may be finished with a standing seam metal or sheet metal system or a fiberglass shingle system surfaced with ceramic coated mineral aggregate. All steep slope roofs **must** have a full width (36") of modified bitumen ice dam protection membrane installed at all eaves and valleys.

- a. Standing Seam Metal Roofing Systems shall be fabricated metal panel systems from nominal 22 gauge G-90 galvanized steel conforming to ASTM A446 Grade A and ASTM A525. Alternative panel thickness of 24 gauge or 20 gauge may be considered based on an evaluation of roof framing and purlin spacing. **All standing seams shall be double locked.**

The system shall conform to the requirements of ANSI Publication A 58.1, BOCA, and the American Institute of Steel Construction Manual. The panels shall have a UL Class 120 rating and the structural uniform uplift load capacity shall be in accordance with ASTM E330. The finish shall be equal to at least 70% Kynar and shall be tested in accordance with ASTM procedures. The system shall have a 20 year manufacturer's weatherproof warranty. The Kynar color finish shall also be covered by a 20 year manufacturer's warranty.

- b. Asphalt Shingles shall be reinforced with fiberglass wind resistant type, UL Class A, and comply with ASTM D3462 and ICBO ES AC 127. Shingle manufacturer shall provide a 40 (+) year warranty covering repair or replacement of defective shingles as necessary to eliminate leaks. Where "Nailbase" insulation is used ventilation must be provided. Metal drip edges **must** be installed on all eave and rake edges.
- c. Special Roofs: Under special conditions relating to aesthetic compatibility with surrounding buildings or historical consideration, the use of clay tiles, slate tiles, or cedar shakes may be deemed appropriate. In these cases specifications and details shall be developed in strict accordance with applicable national standards. The roofing tile or slate manufacturer/quarrier shall provide material defects warranty coverage of 20 years minimum to 50 years or more based on the specific roof material and facility under consideration.

d. Steep slope roofs shall be provided with adequate means for interior ventilation through eave or soffit louvers, ridge vents and thermostatically controlled power fans to prevent moisture condensation and excessive heat under roofing or sheathing.

5.3 LOW SLOPE ROOFS: Low slope roofs shall be required to have a minimum slope of 1/4 inch per foot. New buildings shall be designed to achieve the minimum slope of 1/4 inch per foot structurally. Existing buildings may have to be provided with tapered insulation to achieve the minimum slope. Lightweight concrete shall not be used to create slope. Prior to placement of insulation and the roofing system, all low slope roof decks shall have:

- * Steel Deck - 1" perlite insulation mechanically fastened and 2 plies of fiberglass felts.
- * Concrete Deck - Asphaltic primer and 2 plies of fiberglass felts.
- * Nailable Decks (other than wood; Lightweight Concrete, Gypsum and Tectum) - Rosin-sized sheathing paper, 75 lb. ventilated base sheet, mechanical fasteners dictated by deck type and 2 plies of fiberglass felts.
- * Wood Decks - Mechanically fasten 1" thick perlite insulation to deck and install 2 plies of fiberglass felts with hot asphalt
Note - If wood deck is less than 3/4" thick, nail base sheet to deck and install 2 plies of fiberglass felt over base sheet.

On low slope roofs from 1/4 inch per foot up to 2 1/2 inches per foot (all felt plies are to be back-nailed on slopes greater than 2" per foot), the following roofing system will be used:

Four Ply Built-up System: This system shall consist of four plies of roofing felts alternately placed and overlapped and saturated with hot asphalt bitumen. Gravel surfacing to be set in hot asphalt. Roofing felts shall be glass fiber and shall meet the requirements of Tables 1 and 2 ASTM D-2178 Type VI (Asphalt Impregnated). Steep roofing asphalt shall conform to ASTM D-312, Type III.

Warranty - The roofing system shall be covered by a 20 year Total System, No Dollar Limit Warranty. **All materials must be manufactured by the manufacturer who is to supply the warranty.** Any materials that are not made by the Roofing Materials Manufacturer but submitted for approval **must** be accompanied by a letter from the Roofing Materials Manufacturer issuing the 20 year NDL warranty, stating that this material is suitable for use with their system and fully covered under their 20 year NDL warranty.

5.4 INSULATION

a. All low slope roofing systems shall include insulation. The majority of insulating value shall be accomplished with the necessary thickness of flat polyisocyanurate boards. Where necessary, roof slope shall be developed with tapered perlite board. Organic insulation material shall not be used under built-up roofs. Light weight concrete insulating fill is not acceptable. In all cases a minimum 1/2" cover board **must** be installed over the Isocyanurate insulation. Perlite and wood fiber are acceptable cover board materials.

b. Heat Transmission: Insulation heat transmission values

shall be established in accordance with the latest revision of the DGS Energy Conservation Guidelines. For new buildings the suggested insulation value of the roof area envelope is R-30. For roof replacements/renovations on older buildings, a lower "R" value will be considered.

- c. Structural: The first ply of insulation systems over metal decks and wood decks shall be mechanically fastened using steel fasteners acceptable to the manufacturer furnishing guarantee of roofing system. Insulation shall also be installed in accordance with Factory Mutual System Class 120 wind uplift guidelines.
- d. Compatibility: Insulation material installed between the roof deck and the roof ply shall be compatible with the roof ply material and asphalt bitumen binder or other adhesive used in the roofing system.
- e. Warranty: Insulation materials shall be considered an integral component of the roofing system; and shall be furnished or approved by the roofing system manufacturer; and shall be covered by the roofing system warranty.
- f. Insulation shall be applied in several layers, with the joints staggered, in accordance with the manufacturer's recommendation.

5.5 FLASHING

- a. Base Flashing is part of the roofing system and shall meet requirements of manufacturer furnishing roofing system. Where roof meets a parapet or adjacent building wall, the base flashing shall extend up the wall at least 8 inches, but generally not more than 14 inches unless necessary to be consistent with existing conditions or design requirements. If flashing height is greater than 14 inches, than a 2 piece flashing system may be required.
- b. Other Flashing: Other than base flashing - metal flashing including expansion joint flashing shall be in accordance with SMACNA Standards and the NRCA Roofing and Waterproofing Manual. Pitch pockets are to be avoided, where that is not possible they are to be filled with a pourable urethane sealer. Roof penetrations will be flashed with preformed flexible flashing, using clamps and tents unless the penetration is such a complex shape that a pitch pocket is required. **All parapet walls must be covered with a metal coping cap over a "peel and stick" type modified bitumen membrane and any necessary wood blocking/nailers.**

- 5.6 ROOF DRAINS shall be provided with shallow sumps, gravel stops, and minimum 4.0 pound lead flashing in accordance with the NRCA Roofing and Waterproofing Manual. Drains will be located wherever possible at the low points, and crickets must be provided between drains in structurally formed valleys and around any structure impeding the flow of water in the drain field to assure positive water flow to the drains. Roof drainage patterns should be designed to locate roof drains at the mid-points between columns and beams. Overflow scuppers should be provided through perimeter parapet walls to relieve storm water build-up caused by clogged roof drains. Where roof drainage is directed to exterior downspouts, splash blocks shall be provided at all ground discharge points. Where possible, downspouts may discharge directly into a storm drainage system.
Add overflow scuppers or relief drains as necessary (per National Plumbing Code).

- 5.7. ROOF ACCESS: Permanent access to all roof areas from the inside of the building shall be provided (with a "ship" type ladder) for all buildings over two stories high with low slope roofs. Roof

access for one and two story buildings with low slope roofs and for buildings with steep slope roofs will be evaluated based on building and roof configuration and roof type. Exterior access must be provided for all multi-level roofs from the second story up.

5.8 ROOF MOUNTED EQUIPMENT shall be minimized; penthouse enclosures of equipment are preferred.

- a. Roof mounted equipment shall be installed on curbs and shall be provided with suitable vibration isolation devices.
- b. If it is necessary to mount equipment above the roof, without using a curb, sufficient clearance shall be provided under the equipment to permit maintenance of the roofing system as well as adequate clearance for future roof replacement. Equipment screens must be provided to conceal all roof top equipment.
- c. Inorganic walking pads shall be provided from roof access to roof mounted equipment. Modified bitumen membrane is acceptable.

5.9 CONTRACTOR'S GUARANTEE: The contractor must have at least 5 years experience installing the type of roofing they are bidding on. The contractor must be an "NDL" certified roofing system installer for at least 5 years and supply the State a current letter from a roofing materials manufacturer stating this. The contractor must also supply the State with a 5 year workmanship guarantee.

6. FOREST CONSERVATION PROCEDURES

- 6.1 REQUIREMENTS: In accordance with Natural Resources Article, Title 5, Forest and Parks, subtitle 16, Forest Conservation, all construction activities involving but not limited to clearing, grading, erosion and sediment control on areas greater than 40,000 square feet by a unit of State government or any person using State funding for a construction project, shall require a "Forest Stand Delineation" and a "Forest Conservation Plan" for submission to and approval by the Department of Natural Resources, Resource Conservation Service, Forestry Division.
- 6.2 SITE: Subsequent to preparation of a "Forest Stand Delineation", in accordance with DNR Article, Title 5 and as an integral part of the site planning process, a "Forest Conservation Plan" shall be prepared and submitted which outlines the proposed forest retention, reforestation, afforestation and/or forest protection procedures associated with the proposed land use change.
- 6.3 CONSERVATION FUND: If site and development constraints preclude the aforementioned "Forest Conservation Procedures", then a monetary contribution to the Conservation Fund shall be made at the rate of 10 cents (\$0.10) per square foot of the area requiring planting as determined by the "Forest Stand Delineation" and the "Forest Conservation Plan".

7. EARTHQUAKE CONSTRUCTION

- 7.1 REQUIREMENTS: Facilities should be designed for earthquake loads per applicable provisions of BOCA or the Building Seismic Safety Council (BSSC) whichever is more stringent. Of particular concern should be "provisions of adequate ductility to structural components, especially connections, consistent with the design levels assumed; and adequate anchorage of nonstructural components such as parapets."

8. CHESAPEAKE BAY POLICY

- 8.1 REQUIREMENTS: A/E's are required to incorporate the Chesapeake Critical Area and Wetlands Regulations administered by the

Chesapeake Bay Critical Areas Commission, Dept. of Natural Resources, into the design of construction projects.

- 8.2 CRITICAL AREAS COMMISSION (CAC) APPROVAL: For projects which have received general approval from the CAC, the A/E will be responsible for submitting Schematics, 50% and 95% construction documents to the CAC. In all instances, one copy of the transmittal letter acknowledging receipt by the CAC shall be submitted to the DGS Project Manager. The A/E shall provide to DGS, two copies of the CAC's letter which indicates their approval of each phase of the proposed design.
- 8.3 FORMAL PRESENTATION: The A/E may be required to make formal presentations to the CAC.

9. STATE FIELD OFFICE

For Capital improvement projects, the A/E shall incorporate the appropriate requirements into the appropriate Division 1 section of the contract specifications.

- 9.1 The contractor shall furnish and maintain, at his cost and for the State's exclusive use, the following:
- a. State Field Office: Provide one (1) prefabricated and completely finished temporary office trailer unit with lockable entrances and operable windows. Only the State shall have keys to this trailer. At such time as deemed necessary by the DGS Inspector, the State field office may be moved inside of the substantially complete building. However, all space requirements, specified equipment and services must remain intact.
 - b. Space requirements:
 - 1. Provide a minimum of 500 square feet gross floor area.
 - 2. Provide running water, toilet room with flush water closet, lavatory and approved water drainage system, medicine cabinet, paper towels and toilet paper (including dispensers).
 - c. Installation Schedule: Provide a complete Owner's Field Office facility in a location on the site as coordinated with the owner. The office shall be set up and made ready for use promptly upon issuance of a Notice to Proceed and at least seven (7) days prior to beginning any work on the contract.
 - d. The Contractor shall provide weekly janitorial service to keep quarters of the State representatives clean and neat at all times and adequately stocked with supplies.
 - e. Equipment:
 - 1. Electric Water Cooler and Water: Provide continuous service for the duration of the construction project. 5 gallon bottled water such as "Great Bear" or approved equal.
 - 2. Heating: Size to provide a minimum 70 degrees F. inside temperature under the ASHRAE winter outside design conditions applicable to the construction site location. Provide distribution system sufficient for uniform heating and comfort.
 - 3. Ventilation: Mechanical type sufficient for comfort during the change between heating and cooling seasons.
 - 4. Air-conditioning: System sufficient to provide a

minimum of 80 degrees F. inside temperature under ASHRAE summer outside conditions applicable to the construction site location.

5. Equipment Options: Provide the equivalent heating, ventilation, and air-conditioning in a single combination unit or in other combinations.
6. Electrical: Complete wiring system including service entrance per NFPA No. 70. Provide one (1) duplex convenience outlet for each 150 square feet of floor space with four (4) duplex convenience outlets at a minimum. Provide additional outlets and circuits for water cooler and air conditioning and heating units as required. Provide a minimum of one (1) smoke detector. Provide fluorescent lighting suitable for the tasks, based on 3 watts per square foot uniform distribution. (Lighting Requirement - 40 fc illumination at work surfaces).
7. Telephone: Provide and maintain a separate telephone service with one (1) telephone number for the duration of the contract. Service shall not be shared with the contractor. The contractor shall pay for all telephone services, including long distance business calls. Separate message answering services shall also be provided through either computer software, telephone service provider or tape recorder.
8. Facsimile Machine: Provide and maintain a plain paper fax machine with all necessary supplies including paper and replacement tone cartridges as needed. The fax machine is to have a separate dedicated telephone line with one (1) telephone number for the duration of the contract.
9. Copier: Provide and maintain a photocopier (and paper) with the following standards:
 - a) Minimum copy speed of 12 letter-size 8 1/2" x 11" copies per minute.
 - b) Capable of reliably producing at least 3,000 copies per month.
 - c) Stationary platen or moving platen.
 - d) Copier shall use plain recycled bond paper.
 - e) Copy sizes 5 1/2" x 8 1/2 to 8 1/2" x 14".
 - f) Maximum original paper size 8 1/2" x 14".
 - g) Copier shall have a minimum total paper capacity of 250 sheets.
 - h) Copies shall have copy count meter.
 - i) Copier shall have copy contrast control.
 - j) Copier shall have copy unit selection of 1-99.
 - k) Copier of tabletop design shall be furnished with the offeror's standard commercial cabinet base included.
 - l) Copier shall have a self-diagnostics system which indicates a minimum, the following conditions:

- (1) needs toner
 - (2) needs paper
 - (3) paper misfeed or jam.
- m) Automatic 2-sided copying (Duplexing).
10. First Aid Supplies: Comply with governing regulations
11. Computers
- a) Personal Computer Hardware Specifications (Minimum Requirements):

Hardware Specifications (Minimum Requirements):
200MHz MMX Intel Pentium Processor; 32MB EDO RAM (128MB Max); 512KB Pipelined Burst Cache; 3.5GB Hard Drive; 3.5" 1.44MB & 24X CD-ROM drives; 17" SVGA Color Monitor supports 1024x768 pixels, 256 colors, no less than 72 Hz refresh rate noninterlaced display mode, no more than 0.26mm dot pitch; 64-Bit 3-D Graphics Acceleration with 2MB EDO Video Memory; 1.6GB Tape Backup with windows software; 33.6 kbps Data/Fax/Voice Mail Modem; Enhance 101 key IBM AT compatible keyboard with interface cable; serial mouse with point and click interface and driver; mouse pad; Mini-Tower Case; Laser Jet Printer with 600 x 600 dpi, 2 MB RAM, 250 sheet, 6ppm, and printer cable.
 - b) Notebook Computer Hardware Specifications (Minimum Requirements):

150MHz MMX Intel Pentium Processor; 24MB EDO RAM, 12.1" SVGA TFT Active Matrix Display; 2MB EDO Video RAM with graphics accelerator; 1GB HD; 3 1/2" 1.44MB & 10X CD-ROM Internal FDD; Touchpad Pointing Device; 9-pin serial port; 25-pin parallel; 15-pin external SVGA (supports 1024x768, 256 colors); PCMCIA Slots-one Type III or two type II; 33.6 built in modem; 3 hour battery life; Extra Battery Pack; External Battery Charger; AC Adaptor; Car Battery Adaptor; Carrying case; Portable Ink Jet Printer with 600 x 300 dpi black printing, 3ppm black printing, built in battery, carrying case, and printer cable.
 - c) Additional Requirements for Personal and Notebook Computers:
 - (1) Software Specifications (Minimum Requirements): Provide Microsoft DOS 6.22; Microsoft Windows 3.11; WordPerfect 6.1 for Windows; Microsoft Excel 5.0; Microsoft Project 4.0 for Windows. All software should be installed, tested, and include the User's Guides, Reference Books, and installed diskettes or CD's.
 - (2) Delivery: The personal computer will be setup in the job site trailer. The notebook computer will be given to the project inspection.
 - (3) Training: Provide inspector with 8 hours of training in MS Windows, WordPerfect 6.1, and MS Excel 5.0. Type of training to be determined by assigned construction inspector. Training can be on site or at a training center.

(4) Maintenance: The contractor shall be required to maintain, repair, or replace the equipment if necessary and to provide on-site maintenance service contact for the hardware with an eight hour response time. The maintenance contract will be in effect though the duration of the project.

(5) Duration: The computer will be used by the project inspector from the start of the project through its completion.

(6) Supplies: Initial printing cartridges, printer paper, two backup tapes will be included and will be provided through the duration of the project.

f. Furnishings:

1. Furniture: Provide the following new or "like new" reconditioned items:

<u>No. Required</u>	<u>Item</u>
1	30 x 60 desk, flat top double pedestal and two suitable chairs
12	Folding chairs
2	Filing cases, metal 4 drawer legal size, 27-inches deep, baked-on enamel finish. File cabinets shall have keyed locks. Provide keys to inspector
1	Fireproof file cabinet, metal 4 drawer legal size 27 inches deep, heavy duty keyed lock, baked-on enamel finish. Cabinet should be securely mounted to the floor. Provide keys to inspector.

2. Provide Tables: Provide a table suitable for 12 people.
3. Sample Shelves: Provide ceiling high units 30 inches deep by 4 feet wide. Compartmentalize horizontally with vertical intermediate supports not over 3 feet apart. Close ends and backs with plywood sheet.
4. Plan Racks: Provide 1 unit with at least 10 sets of plan binders.
5. Shades: Provide standard fabric roller shades or metal slat Venetian blinds at all windows.
6. Fire Extinguisher: Provide ABC fire extinguisher, the number and extinguisher rating and location of which shall be in accordance with NFPA No.10.

- g. Maintenance: The contractor will be responsible for the maintenance and/or repair of all items listed in this section for the duration of the contract. If an item cannot satisfactorily repaired it shall be replaced by the

contractor within two(2)working days.

- h. Security: Provide adequate security measures for the DGS Construction Office at all times. The contractor is to provide two(2)days replacement of any equipment supplies if stolen from the DGS resident inspector's temporary field office.

10. ELEVATOR DESIGN

Access to elevator machine rooms shall be by means of a conventional stairway. DGS will not approve the use of alternating tread or "Lapeyre" stairways.